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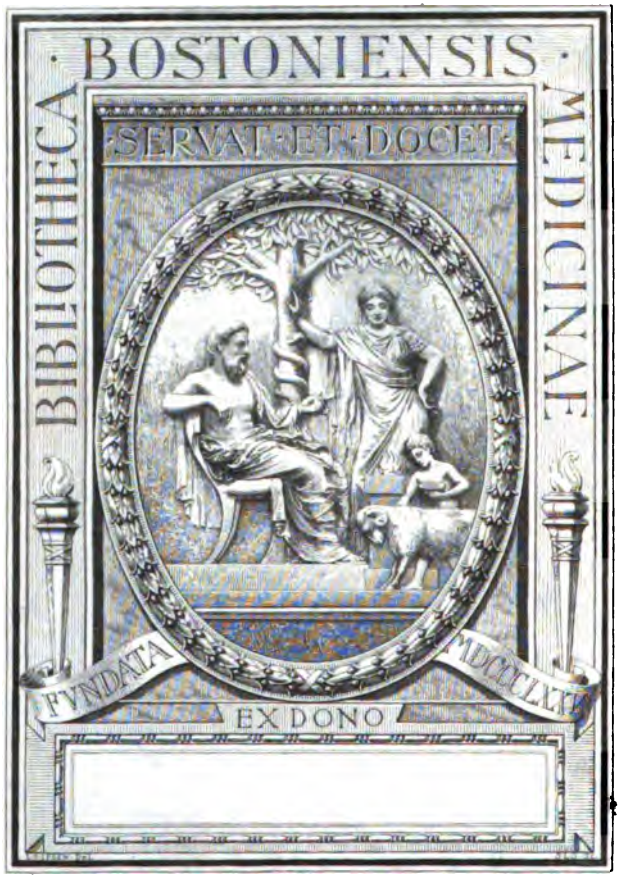
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TRANSACTIONS

OF THE

Luzerne County Medical Society

FOR THE

Year Ending December 31

1905

VOLUME XIII

TRANSACTIONS

OF THE

Luzerne County, Pa., Medical Society,

FOR THE

Year Ending December 31, 1905.

VOLUME XIII.

ORGANIZED MARCH, 1861

WILKES-BARRE, PA.
THE E. B. YORDY CO., PRINTING AND BLANK BOOK MAKING.
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ADDRESS OF THE RETIRING PRESIDENT.

DR. LEVI I. SHOEMAKER, WILKES-BARRE, PA.

READ AT THE ANNUAL MEETING, JANUARY 11, 1905.

The other day I was suddenly roused to the recollection of the fact that, following the custom established and maintained by some of my predecessors in the office of president of the Luzerne County Medical Society—a long line of talkative but, *otherwise,* worthy men—I would be expected to unload myself of some words and a few thoughts upon this present occasion.

A certain writer has lately referred to the "national vice of *public gabble*" which, according to his experience, prevails to a wide and distressing extent in this country. Speaking for myself, I can honestly say that I have never distressed myself or others, to any wide extent, by the practice of this vice. In consequence, when I faced the problem to be worked out here to-night, I found myself—in the slang of the day—"up against it"; just as an old-time country doctor, who, summoned in great haste late one night to the bedside of a patient living several miles distant, found, when he got there, that the only drugs he had in his saddle-bags were in the nature of opiates and narcotics, and that his patient was suffering from heart-failure. That was not an occasion for the use of depressing drugs, as the unprepared and unhappy doctor realized; nor is the present either the time or the place for administering anything of a soporific nature. But what may, can or must the surprised doctor do in such circumstances? There is but one answer to this medical conundrum: He must do *nothing* or else use the contents of his saddle-bags or medicine-case. If, therefore, you will be passive and patient, I will, without any further preliminaries, dose you mildly, quickly and as painlessly as possible with a few observations on

SOME DISEASES AND THEIR REMEDIES; OR EVERY MAN HIS OWN DOCTOR.

A physician of some standing, who makes a study of social economics and is alleged to be a scientist, stated some time

ago that "Medicine has destroyed more lives than war, pestilence and famine combined." I presume that the world at large believe this to be an absolutely correct statement, especially if Voltaire's definition of a doctor is recalled, to wit: "He is one who pours drugs of which he knows little into a body about which he knows less, in order to cure diseases concerning which he knows nothing."

The *art of killing* has made vast strides since primeval men fought with the thigh bones of their deceased relatives; and in these days of Gatling-guns and submarine torpedoes no one will deny that it continues to develop with a rapidity which must be highly comforting to believers in Malthusian doctrines. The *art of healing,* on the other hand, has certainly not progressed to a proportionate extent, and scoffers may even be found that maintain that it has not advanced a single step since the time of Hippocrates. With all its inevitable limitations, however, medicine *has* progressed and will continue to progress —slowly, perhaps, and too often wandering from the right path; occasionally, even, losing ground.

> "Friends and physicians could not save
> This mortal body from the grave!"

is the doleful couplet that adorns many an antique tombstone in old New England grave-yards; and when disease has baffled the skill of some modern physician, the pessimistic old conservative, with a contemptuous toss, says: "Doctors don't know anything; what they seem to do is mostly guess work."

By far the greater part of such progress as has been made in medicine, has been achieved within comparatively recent times. One hundred and twenty-five years ago the question, "Is medicine a progressive science?" might have been answered in the negative without much absurdity. Such advances as had then been made had been mostly of an isolated and a fortuitous nature. A few brilliant discoveries had been stumbled on, but the *science* was pretty much where William Harvey had left it in 1657, while the practice was little better than that of Galen.

A distinguished doctor of a quarter of a century ago re-

marked: "Of the nature of disease, and whence it comes, we still know nothing; but thanks to chemistry we have *new supplies of ammunition.* For every drug of our fathers, we now have one hundred. We have iodids, chlorids and bromids without number; sulfates, nitrates, hydrochlorates and prussiates beyond count." This is, in very truth, the "Golden Age" for physicians and druggists, for when one takes the trouble to recall the names and characteristics of medicine in use half a century ago, and contrasts the same with the remedies employed at the present day and their results, the difference is striking indeed. In old times it seemed to be the idea that the more horrible the taste of the medicine, the more likely it was to cure. This idea was carried out to such an extent that the most nauseating and disgusting articles were used as medicines, and the compounding of them in tolerable or even palatable shape was scarcely thought of. It was no unusual thing to put medicine into the mouth of a child and then hold the helpless youngster until it was forced to either swallow the vile stuff in its mouth or strangle. When this means was not resorted to the slipper or the switch was brought into requisition, and many a child had to take not only the switch but the medicine as well, and that, too, in allopathic doses.

For a long time the medical profession clung to the traditions of the ancients, and was controlled by what Aristotle and Galen had said. Some years ago an English writer in *The Nineteenth Century* afforded his readers a glimpse of "Mediaeval Medicine," and the glimpse was enough to convince us that a very noble science and profession had had a very long and trying conflict with superstition, prejudice and gross ignorance which regarded itself as knowledge and wisdom. In the Middle Ages the dissection of a human cadaver was forbidden by the clergy, on the ground that it was impious to cut up a form made in the image of God. A great Spanish doctor, in the reign of Philip II. was condemned by the Inquisition to be burnt for having performed a surgical operation. Philip overruled the savage decree, but only on the condition that the doctor should expiate his crime by making a pilgrimage to the

Holy Land. This he did, and died there in poverty and misery.

A medical book published in 1561 contains the following cure for headache: "Take the brains of a hog, roast the same upon a gridiron, cut slices thereof and lay upon the part where the pain is. For pain in the back of the head blood should be let under the chin, especially on the right side." In order that a man might become bold, strong and terrible, he was to carry about with him the eves or a part of the skin of a lion or a cock. If it was desired that a man should become talkative he was to be given tongues—those of frogs and ducks being most effective. A baked toad, hung from the patient's neck in a silk bag, was prescribed to stop bleeding at the nose. Live worms tied round the finger were used to cure whitlows or felons. Toothache was to be cured by rubbing the teeth with the fat of green frogs, or with grey wood-worms put into the tooth. The following was the cure for asthma: "Pull the patient sore by the earlop upwardly, and incontinently he shall be healed." If, in any case, the heart of a patient were found to "be faint because of *superfluous emptiness of the body,*" the patient's face was to be cooled with water, his nose was to be pulled and he was to be scratched "about the pit of the stomach."

The printing of medical cyclopaedias and hand-books for the information and guidance of the general public has been going on for more than three hundred years, and prior to about fifty or sixty years ago these "family doctor-books" were held in higher regard, and were very much more resorted to by the ailing ones of civilized mankind, than they are at the present time. In fact, they were consulted and relied upon by the practicing physicians themselves. One of these books, published in London in 1684, bears the title "The Pearl of Practice." The particular copy we have in mind was in constant use for many years by an old English doctor who came to this country in the latter part of the seventeenth century. Truly, British brawn and the accessory of England's climate were neeeded even for the "survival of the fittest," if many of these

strange and wonderful prescriptions were followed. Even so early in our history the Americans were far too "nervous" to bear many such heroic doses, supposing the true nature of the ingredients could have been concealed. By the many receipts given for curious "oyls," "plaisters," "oyntments" and "salves," one judges that the efficacy of "outward applications" was seldom called in question.

The following "approved receipt to break the stone on the kidneys" is printed in "The Pearl of Practice": "In the month of May distill cow-dung then take two live hares and strangle them in their blood. Then take one of them and put it into an earthen pot and cover it well with a mortar made of horse-dung and hay, and bake it in an oven with household bread until the hare be baked or dried to powder. Then beat it well, and keep it for your use. The other hare you must flay, and take out the guts only; then distill all the rest, and keep this water. Then take at the new and full of the moon, three mornings together, as much of this powder as will lie on a sixpence, with two spoonfuls of each water—the cow-dung and the hare—and *it will break any stone in the kidneys.*"

Another of the most valuable receipts in this book is one for a "Sovereign Cordial Water." It is composed of from one to two pounds each of thirty-nine different plants, "two pounds of shaved hartshorn, twelve ounces of ivory, a goodly quantity of claret wine and the best malaga sack," all distilled. This "water," the book declares, "comforts the vital spirits, and helps all inward diseases that come of cold; it is good against the shaking of the palsy; it kills the worms in the belly and stomach; it helps shortly the stinking breath, and whosoever useth this water morning and evening it preserveth him in good living and will make him seem young very long; and it comforteth Nature marvelously."

A proved remedy for colic is this: "Take a turf of green grass and lay it to the navel, and let it lie till you find ease. The *green* side must be laid next to the belly."

Before the year 1700 the bulk of medicines used by the most celebrated doctors were of vegetable origin. These were made

up into absurdly complicated mixtures, and called by some equally absurd sesquipedalian Latin or Greek name. In looking over "The Angel of Bethesda," a treatise on healing, written in the early part of the eighteenth century by the famous Cotton Mather of Massachusetts, we find the author praising *sage, rue, saffron, garlic,* and *elder,* and adding: "But these five may admit of some competitors, but the *Quinquinia*—how celebrated. Immoderately, hyperbolically celebrated." Mather quotes "Mr. Lock" as recommending red-poppy water and abstinence from flesh as useful in childrens' diseases.

In 1747 there was published in Philadelphia a quaint and curious little book entitled "Primitive Physic; or, An Easy and Natural Method of Curing Most Diseases." This book was compiled by the celebrated John Wesley, Master of Arts, the founder of Methodism. In his preface he deals with the *raison d'etre* of the book, incidentally recalling how "man was sent from the hands of God perfect, needing no physic; but, rebelling against the Sovereign of all, the seeds of pain and sickness were lodged in the body, and a thousand disorders increased by everything around us. The sun and moon shed unwholesome influences from above; the earth exhales poisonous damps from below; the air itself that surrounds us is replete with the shafts of death; yea, the food we eat daily saps the foundations of life." With reference to the use of the remedies set forth in his book Wesley says: "As soon as you know your disorder—*which is easy,* unless in a complication of disorders, and then you will do well to apply to a physician who fears God. I should advise: First, use the medicine first advised for that disease; the second, if that is of none effect; the third, and so on."

This work recites, in alphabetical order, the disorders of that period and their remedies. A remedy for *ague* is to "apply to the stomach a large onion, split." Still another is: "Make six middling pills of cobwebs. Take one before the cold fit, two a little before the next and the other three, if need be, before the other fit." The remedy for baldness reads thus: "Rub the bald part of the head night and morning with

a raw onion, until red; rub afterwards with honey. How does modern hydropathy compare with this instance? "Miss Bates of Leicestershire bathed daily, using the cold bath for a month and drinking only water. This cured her of cancer in the breast, a consumption and a sciatic rheumatism." "For the ileac-passion (colic), hold a live puppy constantly on the breast; or, take, ounce by ounce, a pound or a pound and a half of quicksilver." "The bleeding of an amputated limb may be stopped," states Wesley, "without any cautery, if ripe puff-balls are broken warily and the powder be strewn on the wound and bound on it. Two spoonfuls of nettle-juice will stop the vomiting of blood." In these days of grip here is a receipt that might be tried: "I earnestly desire every one who has any regard for his health to chew, immediately a cough appears, the quantity of a peppercorn of Peruvian Bark. Swallow the juice as long as it tastes bitter; then spit out the wood. It seldom fails to cure a dry cough."

About nine years after the publication of Wesley's "Primitive Physics" we find Judge Edward Shippen, formerly of Philadelphia, but then of Lancaster, Penna. (a scholarly, cultured man, one of the founders of Princeton College as well as of the University of Pennsylvania, and for twenty years a member of the Board of Trustees of the former institution), writing to his son, Col. Joseph Shippen, at Fort Augusta, Shamokin, now Sunbury, Penna., as follows: "I have been credibly informed that in August and September it is always so very sickly at Shamokin that the Indians endeavored as much as possible to be absent in these months. Your present situation must be very pleasant, but remember now is coming on fast fevers and agues and intermittent fevers and pleurisies. My advice to you and Mr. Burd is, immediately to provide yourselves each with a dozen of *Jesuit's-bark,* taking one every morning, fasting; and after you have done this you should rest a week, and then take six doses apiece of *Aethiops-mineral* (now known as blue-pill), every morning, and these cordials, under God, will preserve you in health." A year later Judge Shippen wrote to his son: "I hope you take *bark* every day by way of pre-

vention of the intermittent fever, which rages almost throughout the whole Province."

The dissemination of medical information to the masses in the eighteenth and the early years of the nineteenth centuries was not confined to "The Angel of Bethesda," the "Family Doctor-book," "Primitive Physic," the "Guide to Health" *et id genus omne,* for nearly every newspaper and magazine printed from time to time what the publishers deemed to be valuable prescriptions for remedies and cures. Time will not permit me to make more than a passing mention of this phase of medical instruction. Two illustrations must suffice. The first is a "Remedy for Putrid Fevers," and was published in one of the leading magazines of Dublin, Ireland, in September, 1794. It is as follows: Yeast, or barm, to the quantity of three or four spoonfuls, hath been exhibited in putrid cases, with the most singular effcacy and success; so that patients, in the extremity of this very contagious and most fatal disease have been seen almost instantly to have recovered from a dying state to perfect safety. Probably it will be expedient to use a little warm water *to wash the yeast down the patient's throat;* and also, to administer, at the intermediate hours, as useful auxiliaries, a few of the customary and most efficacious antiseptic cordials and draughts."

The following medical information was printed, in good faith, in *The Luzerne Federalist,* published in this town November 22, 1805: "The following cure for a felon has never been known to fail but once these thirteen years. It is both cheap and safe. Take any sort of glass, pounded fine, and goose-dung, and rue, with a little Indian meal. Mix all together thin with cold water. Apply a pretty large poultice, and when the finger seems dry and hot, wet the poultice and apply it again. In twelve hours make a new one. Two or three seldom fail to cure." The editor of the *Federalist,* in drawing attention to this felon-cure, queried whether the dung of a *gander* would not answer as well as that of a *goose.*

The old-time doctor certainly did administer heroic remedies. He seemed to have a perfect genius for compounding

nauseous mixtures. In those days bleeding was the *first* remedy tried on young and old for about every ailment. Fever patients were first bled and then kept in a close room, blanketed up to the chin. Cold water, either taken internally or applied externally, was next door to poison; yet the doctors then shook their heads as solemnly and looked as wise as they do now. The so-called "quacks" who first prescribed light bedcovering, airy rooms, cooling drinks, and ice to the throbbing temples were roundly denounced. The fact is that up to the beginning of the last century there were but few physicians who were really learned, well-informed, or even *studious* men. It is a well-known fact that in the early years of the last century physicians had virtually no place in European society. They were merely tolerated when eminent. They were not regarded, socially speaking, as gentlemen, nor did they receive treatment as such. This was due, in part, to a survival from the olden days when the surgeon and the apothecary stood on the same social level as the barber—the three offices being often united in one and the same person.

I have heard of a doctor who practiced in this Wyoming Valley early in the last century. He had not spent the beautiful days of his youth in the society of corpses. The science of medicine had sprouted in his head one fine day, like a mushroom. If he knew medicine, it was because he had invented it. His parents had never dreamed of giving him a liberal education. All the *Latin* he knew was on his bottles, and even there—if he had depended on the labels—he would often have given *nitric-acid* for *nux-vomica*. His directions to his patients were delightfully comprehensive. "Take a little of this 'ere and a little of that air," he would say, "put it in a jug before the fire; pour some into a cup, stir it up with your finger and take it when you are warm, hot, cold or feverish." One of his prescriptions is absolutely appalling to the imagination, for it comprises green tobacco, henbane, chamomile, bitter-sweet root, heartsease, dock leaves, catnip, plantin leaves and eighteen other ingredients. One day a patient, having doubtless drunk the full bitterness of such a prescription, said to him:

"What is the need of so many different things, Doctor?" "Well," was the reply, "if you are going to shoot a bird you use plenty of *shot*. Some of these things will be pretty sure to hit the case."

But this Wyoming Valley doctor was not the only one who at the beginning of the nineteenth century was "short" on his stock of medical knowledge. On March 1, 1800, three prominent physicians of Philadelphia, forming a committee of the Philadelphia Medical Society, issued, by order of the society, a circular which was printed in various newspapers throughout Pennsylvania. It was published in *The Wilkes-Barre Gazette* on April 15, 1800, and read, in part, as follows: "The Philadelphia Medical Society, desirous of increasing the stock of useful medical knowledge, have determined to offer a medal of the value of $60 for the best dissertation in answer to the following question: What are the effects of the following medicines upon the human body, especially upon the pulse? Black Henbane, Thorn-apple, Hemlock, Camphor, Amber, Musk, Digitalis, Fox-glove, Squill, Rhododendrum Maximum (an indiginous American plant called "Mountain Laurel"), and the principal preparations of Lead."

I have wondered how many members of the Philadelphia Medical Society to-day use in their practice all the "*Medicines*" listed in this circular; and how many members of our Society would be able, off-hand, to write a dissertation on the effects of some of the things mentioned. But, I am tresspassing on your time, and must bring this dissertation to a close. Let us be thankful that we live in the twentieth century, albeit one of multitudinous patent medicines, hypnotism, Christian Science, Osteopathy and numerous other "isms." We humbly trust that what little medicine we are forced to prescribe will better bear analyzing than the strange pharmaceutical compositions of animal, vegetable and mineral substances gleaned from the publications we have mentioned.

PIONEER PHYSICIANS OF WYOMING VALLEY, 1771-1825.

BY FREDERICK C. JOHNSON, M. D., WILKES-BARRE, PA.

READ BEFORE THE LUZERNE COUNTY MEDICAL SOCIETY.

[In this paper no attempt has been made to distinguish between men who were educated physicians and those picturesque characters who, in one crude form or another, ministered to the ills of suffering humanity. To have passed as doctors is sufficient warrant for including them in the present narrative.]

To-day there is a practicing physician for every 700 inhabitants of Luzerne County and perhaps every square mile will average a disciple of the healing art. To-day, with a busy population of a quarter of a million souls, it is with difficulty that we can picture this same portion of Pennsylvania as it was in the half century up to 1825, the period with which this paper has particularly to deal.

As originally erected in 1786, Luzerne County stretched along the Susquehanna River from the mouth of the Nescopeck Creek, opposite Berwick, northward to the New York State line, a distance of 150 miles by the rough bridle paths of that day, whose trails are now occupied by our modern iron highways, or 120 miles as the bird flies.

Of this vast wilderness, covering the northeastern quarter of Pennsylvania, Wilkes-Barré (or Wyoming, as it was called), was the centre, and here lived the doctors, here were the courts, here was the capital of old Westmoreland (belonging to Connecticut, though geographically separated from it), and here were contested the rival claims of Pennsylvania and Connecticut for a fair valley whose tragic history is known wherever the English language is spoken.

So far as the records show there was no physician with the first adventurers from Connecticut to Wyoming in 1763. True to their New England instincts every attempt at settlement witnessed the presence of a school teacher and a minister of the gospel, but no special inducements were held out to followers of Esculapius.

But such were not slow in coming and some of them left a marked impression upon a community which had already received a baptism of blood and which was to be wasted by internecine strife for a period of 30 years.

True there was little opportunity in a vast wilderness like Westmoreland for the practice of medicine in the earlier days. The population was widely scattered and—what was a greater obstacle to doctors than all else—hardy. The sturdy life of the pioneer had few emergencies which called for medical interference. Under these circumstances the doctors who came had necessarily to identify themselves with other callings in order to earn a living. Like other settlers they took up tracts of land, or "pitches" as spoken in the language of that day. Sometimes it was for making homes for themselves, but as often it was for speculation.

EARLY DISEASES.

Probably the same causes which in our day produce febrile disorders of a malarial type have always been operative. "At all events, fever and ague," says Pearce, "has raged at various periods along the Susquehanna, ever since the white man lived on its banks, and even earlier, for Shikellimus, the viceroy of the Six Nations, died at Shamokin (now Sunbury) from this malady in 1749."

The most dreaded malady of that day was small-pox. The first epidemic which swept over the settlement at Wyoming was in 1777, in which year the infection was brought from Philadelphia.

Vaccination being then unknown, the only means for combating the disease was inoculation. Great alarm prevailed, but a town meeting was held and measures were taken to fight the disease with the utmost vigor, the result being to allay the public fear and to keep the disease within bounds. Persons desiring this protection could not receive the virus at their own homes, but were compelled to resort to a pest house, one of which was established in each township, half a mile from a traveled road. As far as possible these rude hospitals were quarantined.

Small-pox was a great terror to the Indians and well it may have been, for the red man has never been able to withstand its ravages, and it is the disease, which more than all others combined, has wasted his tribes, generation after generation, and which will not long hence complete the work of extermination.

Pearce says that when the Indians entered Forty Fort on the day of the massacre, the women cried out "Small-pox," with a view of frightening away the savages, but without success, the latter understanding the ruse and going on with their work of plunder. Pearce mentions the presence of typhus fever in 1778. Miner says that in 1780 there was an endemic fever, widespread in extent, and distressing in its severity. An unusually hot summer was followed by an autumn of unprecedented sickness. The prevailing malady was fever—remittent and intermittent—of a particularly severe type on the Kingston side of the river. "Dr. Wm. Hooker Smith skillfully dispensed calomel, tartar emetic and Jesuit bark, and the number of deaths, though considerable, bore a very small proportion to the great number afflicted."

The next year (1781) was also very sickly, typhus being added to remittent and intermittent fever. Among the victims was Lydia, the wife of Col. Zebulon Butler, who was the daughter of Rev. Jacob Johnson. A servant of Capt. Mitchell fell dead at the fort. A son of Capt. Durkee died of nose bleed.

The spring before the massacre was memorable by reason of what was called "putrid fever," a malignant and contagious disease, which claimed among its victims the wife of Dr. William Hooker Smith, and his daughter Mrs. Dr. Gustin.

The first medical man to visit Wyoming Valley, was Dr. J. M. Otto, of Bethlehem, who was sent for to attend Christian Frederick Post, the Moravian missionary among the Indians. This was in the summer of 1755, prior to the settlement of the valley by the whites.

DR. JOSEPH SPRAGUE.

The first to locate and practice medicine in old Wyoming was Dr. Joseph Sprague, who came with his family from Poughkeepsie, N. Y., between 1770 and 1772. In an original "List of Settlers on Susquehanna River, October, 1771," his name appears. Where and when he was born and when and where he died the present chronicler cannot say. "The prospective profits from land speculation probably contributed more," says Hollister, "to bringing him hither than any expectation of professional emolument or advantage in a wilderness."

Shortly after his coming to Wyoming the Wilkes-Barré people offered him a settling right in the township. Like every other settler he was required, under the rules of the Susquehanna Company, to give bonds for the discharge of whatever responsibilities he assumed as a settler. Here is the minute of his admission, by the people in town meeting assembled:

"At a meeting of the inhabitants of Wyoming, legally warned and held at Wilkes-Barré, January 21st, 1772, it was Resolved, That Dr. Joseph Sprague shall have a settling right in the Township of Wilkes-Barre provided he give bond for Fifty Dollars to Capt. Butler and the rest of the Committee for the use of the Company."

He was prompt in executing his bond, for the record is as follows:

Feb. 1772. "Joseph Sprague, late of Poughkeepsie Duchess County, N. Y., executes to Z. Butler, Stephen Fuller and Timothy Smith, Committee of settlers from Wilkes-Barré township, bond for £30—to pay £15, with interest, on or before July 1, 1773, for settling right in Wilkes-Barré."

A still earlier vote to admit him reads as follows:

"Wilksbury, Sept. 30, 1771. Voted in town meeting that Doctor Joseph Sprague shall have a settling in one of ye five towns."

On Dec. 17, 1771, town meeting at Wilkes-Barré "voted that Joseph Sprague (and others named) have each a settling right in ye township of Lackaworna."

Miner says Dr. Sprague was here as early as 1770, and says this may be regarded as the date of the first permanent settlement of Wyoming. When Dr. Sprague came the town plot was covered with pitch pines and scrub oak. The inhabitants occupied the stockade at Mill Creek. There were but five white women in Wilkes-Barré Township besides his family. Miner also says:

"The Mill Creek stockade covered perhaps an acre, a ditch was dug around the area; logs 12 or 14 feet high, split, were placed perpendicularly in double rows, to break joints, so as to enclose it. Loop holes to fire through with musketry were provided. There was one cannon in the fort, the only one in the settlement, but it was useless, except as an alarm gun, having no ball. Within this enclosure the whole settlement was congregated, the men generally armed, going out to their farms to work during the day, and returning at night. The houses, store and sheds were placed around against the wall of timbers. Matthias Hollenback, then about twenty, full of life and enterprise, had just come up the river with a boat load of needed goods and opened a store. On the left was the house of Capt. Zebulon Butler. Next on the right was the building of Dr. Sprague, the physician of the settlement, who added to his scant income by keeping a boarding-house, the largest building in the stockade. Here Mr. Hollenback and Nathan Denison, then twenty-three, had their quarters. Having seen near 40 years afterwards, their venerable forms wrapped in their cloaks, as associate judges of Pennsylvania, we could not repress an allusion to the contrast. Capt. Rezin Geer, who fell in the battle, was here.

"For bread they used corn meal, as the only mill in the settlement was a samp mortar for pounding grain. Dr. Sprague would take his horse with as much wheat as he could carry and go out to Coshutunk (Cochecton) on the

Delaware to have it ground. A bridle path was the only road, and 70 or 80 miles to mill was no trifling distance. While at the Delaware settlement having his grist ground he would buy a few spices and a runlet (small cask) of Antigua rum. The cakes baked from the flour, and the liquor, were kept as dainties for some special occasion, or when emigrants of note came in from Connecticut.

"No furniture, except home-made, was yet in the settlement. Venison and shad were plenty, but salt was a treasure. All were elate with hope and the people, for a time, were never happier.

"But soon work came for Dr. Sprague. Zebulon, a son of Capt. Zebulon Butler, died, also two daughters of Rev. Jacob Johnson, and Peregrine Gardner and Thomas Robinson. Lazarus Young was drowned in bringing up mill-irons for the Hollenback mill. At this time the Indians were numerous about the settlement, some of them very friendly, belonging to the Moravian Society. For about two years the people made their headquarters at the fort, then became numerous and feeling secure, they scattered over the valley."

There were no Indians resident in the valley at this time, though occasional visits were made by the Christian Indians of Friedenshütten (present Wyalusing), in search of game, or fish, or wild hemp. The Indian occupancy of Wyoming Valley as a place of residence, ceased soon after the tragic death of Teedyuscung in 1763.

A great deal of light is thrown upon the values of those early days, as well as upon the modes of living, by the account books of Elisha Blackman, a farmer of Wilkes-Barré, now Hanover Township. These are in the possession of his great-grandson, Henry Blackman Plumb, Esq., author of the "History of Hanover Township." Here is an account with old Dr. Sprague, the amounts being carried out in Connecticut currency, 6 shillings being equivalent to a silver dollar. After 1786 and the establishment of the Pennsylvania claim to the soil, the Connecticut reckoning

gave way to Pennsylvania reckoning—7 shillings and 6 pence making a dollar. The reckoning of accounts in pounds, shillings and pence continued in Wyoming Valley considerably after 1800. (Plumb 212.)

Wilkes-Barré, June 1, 1772.

Doctor Joseph Sprague,

To Elisha Blackman, Senior, Dr.

		£.	s.	d.
	To Cash, Lawful money	0	8	8
	" Work with two men and two horses, plowing an acre of land	0	6	0
	" Plowing two acres between corn	0	3	0
	" One day's work	0	3	0
	" Plowing two acres of corn	0	3	0
1773,	To One quart bottle	0	1	6
	To Cash, one dollar	0	6	0
	To One acre of stalks	0	4	0
	To 1 Bushel and half peck of corn	0	3	7
	To ferry to fetch one bushel of corn	0	0	8
	To A turn with Mr. Porter	0	2	6
1774,	July—To the three boys a day (Elisha, Ichabod, Eleazer)	0	3	0
	To Eleazer, half a day	0	0	6
	To Ichabod, one day	0	1	0
	To 20 pumpkins	0	1	8
	To the three boys one day stripping tobacco	0	3	0
	To one boy a day	0	1	0
	To one pig	0	2	0
1775,	January 10—To ½ a bushel of potatoes	0	1	0
	To 1 bushel of potatoes	0	2	0
	To 10 bushels of corn	0	10	0
1775,	June ye 26—Settled with Mr. Joseph Sprague and found due to him	0	2	0
	[No date]—To payment for doctoring	1	1	9
	To 2½ bushels of corn for Douglas Davison	0	7	6
	To 3 bushels of corn	0	9	0
	To 1½ bushels of corn	0	4	6
	To 1 bushel of corn	0	3	6
	To 4 bushels of corn	0	14	0

This pioneer doctor does not seem to have had permanent residence in Wilkes-Barré. Hollister says, page 150: "Of the yet uninhabited forest, called in the ancient records 'Ye Town of Lackaworna,' Dr. Sprague was one of the original proprietors. His first land sale was for meadow lot No. 13 in Lackawanna Township, sold to Jeremiah Blanchard in May 1772. For a period of 13 years [1772 to 1785], with the exception of the summer of 1778, Dr. Sprague lived near the Lackawanna, between Spring Brook and Pittston, in happy seclusion, practicing medicine when opportunity offered, and in fishing, hunting and farming, until, with the other Yankee settlers, he was driven from the valley in 1784 by the Pennamites. He died in Connecticut." Miner says he died in Virginia. As shown elsewhere he was living in Wilkes-Barré in 1774 and 1776.

Dr. Sprague was twice married. Prior to his joining the Wyoming colony he had married for his second wife Eunice Chapman, who was born at Colchester, Conn., in 1732. He had several children by his first wife. A son fell in the battle of 1778. At the erection of Luzerne County, in 1787, there was a Joseph Sprague, who was chosen court crier. Whether he was a son or not, I have not learned.

The following from unpublished records is furnished by Oscar J. Harvey, Esq.:

May 27, 1772. Joseph Sprague of Wilkes-Barré conveys to Jeremiah Blanchard of Coventry, Kent Co., Rhode Island, for £50, one settling right "in township of Lackawanna, so called.

In April or May, 1772, when there was a final distribution of lots to the proprietors of Wilkes-Barre, Joseph Sprague drew:

Lot No. 46, 1st Division (on Jacob's Plains).
Lot No. 45, 2nd Division (town plot).
Lot No. 30, 3rd Division (back lots).
Lot No. 31, 4th Division (5-acre lots).

About 1773, or 1774, he disposed of lot No. 45, 2nd Divis-

ion—evidently to the town of Wilkes-Barré—and it ultimately became the public grave-yard where the City Hall now stands. It extended from the present corner of Washington and Market Streets to corner of Market and Canal, and along Canal and Washington Streets, each, 332 feet. The lot contained three acres and 136 perches.

In March, 1774, Dr. Sprague was living on lot No. 30, 3rd Division of Wilkes-Barré. He was still there in October, 1776, when, for £110, 10 sh., he sold to Darius Spofford "the whole of said lot on which I now dwell—to extend from the Centre Street (now Main Street) eastward." This lot lay at the corner of the present Ash Street and South Main Street.

March 9, 1774, Dr. Joseph Sprague of Wilkes-Barré deeded to Dr. Samuel Cook of Poughkeepsie, N. Y., for £52, 8 sh., Lot No. 46, 1st Division, or Meadow Lots—35 acres at Jacob's Plains. This lot lay along the river and was about where Port Bowkley now is. This sale must have fallen through, for on July 28, 1774, Dr. Sprague conveys the same lot to Dr. Wm. Hooker Smith, for £100.

Under date, Wyoming, November 25, 1786 (just after the passage of the Act erecting Luzerne County), Dr. Sprague writes to the Supreme Executive Council of Pennsylvania relative to the strife between the adherents of Pennsylvania rule and its opponents:

"The present Surcomstances of this Place Stops the mouth of Every one that is a friend to government; Know one Dare to say one word in behalf of government, or mutch more to inform government, as he would amedely fall a Sacrifice to Lawles and arbartary Power; for this Reseon thar is many good Sitezens in this place that Dare not apeare in the behalf of government but are obliged to be Silent and mute. * * * The true State of afares here at Wyoming is in fact a total Rejection of government, and are at this time forming and modeling a new form of government among them Selves."

Sometime subsequent to 1786, and prior to 1790, Eunice

Sprague of Wilkes-Barré, filed in the Luzerne County Court a libel in divorce against "Joseph Sprague of sd. Wilkes-Barré, Practitioner of Physic." The prayer of the libellant was addressed to "the Hon. Thos. McKean, Doctor of Laws, Chief Justice of the Supreme Court of Penna., and his Associate Justices of the same Court," and set forth that in the year 1769 she was lawfully joined in holy bonds of matrimony with Dr. Sprague. The grounds alleged were: "barbarous and cruel treatment," etc. The divorce was granted.

Dr. Sprague's widow did not long remain in Connecticut after the expulsion by the Pennamites, but she returned to Wyoming and joined with her old friends and neighbors in renewing a home in the wilderness. The influence of her husband's medical skill was not lost on the wife, and when thrown on her own resources she engaged in midwifery, and practice among children, for which by nature she was well fitted. Dr. Hollister says of her:

"Dr. Sprague's widow, known through the settlement as Granny Sprague, returned to Wyoming in 1785 and lived in a small log house then standing in Wilkes-Barré on the southwest corner of Main and Union Streets. She was a worthy old lady, prompt, cheerful and successful, and at this time the sole accoucheur in all the wide domain now embraced by Luzerne, Lackawanna and Wyoming Counties. Although of great age, her obstetrical practice as late as 1810, surpassed that of any physician in this portion of Pennsylvania. For attending a case of accouchement, no matter how distant the journey, how long or fatiguing the detention, this sturdy and faithful woman invariably charged one dollar for services rendered, although a larger fee was never turned away if anyone was able or rash enough to pay more."

Previous to her marriage to Dr. Sprague, Eunice Chapman had been married to a Mr. Poiner at Sharon Nine Partners, N. Y.

After a long and useful life she died in Wilkes-Barré April 12, 1814. In accordance with the usual brevity with

which the newspapers of that day disposed of interesting happenings, the *Wilkes-Barré Advertiser* of April 15, 1814, says:

"Died in this town on Tuesday evening last, Mrs. Eunice Sprague, aged 82 years. She was one of the first settlers of this place."

What a thrilling story could have been written then of the life of a good woman, who may most fittingly be included in the pioneer practitioners of medicine. She was 46 years old at the time of the battle and her recollections of early times were largely utilized by the earlier historians of the valley.

One of her children by her first husband, Phoebe Young, died in 1845, aged 89 years, was 22 years old at the time of the battle, and was the last of the survivors of the infant colony which occupied the stockade at Mill Creek. Charles Miner gives a sketch of Mrs. Young in the appendix of his History of Wyoming, and pays her a deserved tribute. Her husband was in the battle of Wyoming but escaped. She, with Mrs. Col. Lazarus Denison, Mrs. Jonathan Fitch, Mrs. Betsey Shoemaker and their children, escaped down the Susquehanna in a canoe and made their way in safety to Harrisburg.

The following concerning Mrs. Sprague, is from the pen of Wesley Johnson, Esq., in the Historical Record, Vol. 3, page 165:

"Mrs. Eunice Sprague, was in all probability the first woman to practice medicine in these parts. I do not myself remember her, but often, when I was a small boy, heard the old people speak of "Granny Sprague" as a successful practitioner of midwifery and of the healing art among children. Mrs. Dr. Sprague's residence and office, which I well remember, was a one-story log house on the corner of Main and Union Streets, then known as Granny Sprague's corner, where the Kesler block now stands. The old log house was demolished long years ago, but the cellar was plainly to be seen up to the time of erecting the present block of brick buildings. Mrs. Sprague, if I am not mistaken, was the

mother of 'Aunt Young,' who lived in a small, one-story frame house on Canal Street, still standing, a short distance below Union Street, who used to tell us boys how she often listened to the cry of wild cats and wolves in the swamp in front of her place, about where the line of several railroads pass up the valley. I remember that in going to Mrs. Young's place, out Union near the Van Zeek house, we had to pass a water course about where Fell Street joins Union, which at times, after heavy rains, would be quite a formidable stream for children to ford. It was here, as I have heard said, that old Zimri, the town fiddler, was drowned on a dark night as he was on his way home, perhaps slightly boozy, after having delighted the boys and girls during the first part of the night with the exciting dancing music of 'Money Musk' and 'The Devil's Dream,' drawn from his miraculous violin."

DR. WILLIAM HOOKER SMITH.

Soon after the arrival of Dr. Sprague came an interesting personage who figured, not only as a physician, but as a participant in public affairs generally, and whose influence upon the community was marked—Dr. William Hooker Smith.

Dr. Smith, who was born in 1724, located in Wilkes-Barré as early as 1772, his father, Rev. John Smith, who died at White Plains, N. Y., before the Revolutionary War, having been a Presbyterian clergyman in the city of New York. Rev. John Smith was the only Presbyterian clergyman in New York City in 1732; and such was the feebleness of his congregation, that he preached one-third of his time at White Plains. (Hist. Coll. N. Y.)

Soon after Dr. Smith's coming to Wyoming Valley he purchased land and made settlement. A purchase was made by him and his son-in-law, James Sutton, who had come form North Castle, Westchester Co., N. Y., Feburary 1, 1773, of three tracts of land, meadow lot No. 32 in "Kingston," containing about 46 acres, also house lot No. 29, containing 5 acres, and also lot No. 7, 3rd Division, 86 acres, in Kingston Township. Mr. Sutton had settled at what is now

Plains, then called Jacob's Plains. Afterwards he moved to Exeter where he built a grist-mill and saw-mill.

In 1772 he was the only physician, except Dr. Sprague, in a territory of 150 miles in extent, from Cochecton on the Delaware to Sunbury. He is thus described by Dr. Hollister in his History of Lackawanna Valley: "The doctor was a plain, practical man, a firm adherent to the theory of medicine as taught and practiced by our sturdy ancestors of those early days. He was an unwavering phlebotomist. Armed with huge saddle-bags, rattling with gallipots and vials and thirsty lance, he sallied forth on horseback over the rough country calling for his services and many were the cures issuing from the unloosed vein. No matter what the nature or location of the disease, bleeding promptly and largely, with a system of diet, drink and rest, was enforced on the patient with an earnestness and a success that gave him a widespread reputation as a physician.

"Though the doctor was a Yankee by birth, habit and education, such confidence was reposed in his capacity and integrity that he was chosen the first justice in the Fifth District of the new county of Luzerne. His commission, signed by Benjamin Franklin, then President of the Supreme Executive Council of Pennsylvania, bears date May 11, 1787."

In 1779, when 55 years of age, he is said, though this is doubtful, to have accompanied General Sullivan as surgeon on his expedition to the upper waters of the Susquehanna, to punish the Six Nation Indians for their atrocities of the preceding year at Wyoming and Cherry Valley. A score of years after his death Congress in 1838 recognized his Revolutionary services by voting $2,400 to his heirs. The petition to Congress was presented by his descendant, Dr. Andrew Bedford of Waverly, Pa.

The Committee on Revolutionary Claims to which was referred the petition of the heirs of Dr. Smith, reported December 22, 1837:

"It appears from the testimony that Dr. Smith was ap-

pointed a surgeon's mate in the Pennsylvania Line, on Continental establishment, at an early period of the Revolutionary contest and continued in service to the end of the war. It appears further from the depositions of Thomas Williams, Geo. P. Ransom, Rufus Bennet, Elisha Blackman and Gen. William Ross that from July 3, 1778, until the close of the war, Dr. Smith acted as surgeon at the post of Wilkes-Barré, Wyoming Valley, and that he was the only officer of the medical staff attached to that post during that period. The garrison consisted of two companies of regulars and the militia of the valley. These facts sustain, in the opinion of the committee, the claim and a bill is accordingly reported."

The then hidden mineral wealth of the Wyoming Valley and adjacent territory, now making Luzerne County the fourth in importance in the Commonwealth of Pennsylvania, was early recognized by this pioneer physician.

Dr. Smith was a man of many eccentricities but he was a generation ahead of his time in recognizing the existence of our subterranean mineral treasures and in making purchases of lands, of little market value then, but destined to become sources of great wealth when the deposits of coal should become known.

The use of coal except as it had been burned under a bellows blast in the smithy's forge of Obadiah Gore, was wholly unknown, and its availability for domestic fuel was not recognized until Jesse Fell discovered in 1808 that anthracite coal could be burned in an ordinary grate, without the aid of a bellows or other artificial draft.

Yet we find Dr. Smith, as early as 1791, purchasing the right—the first in our local annals—to dig iron ore and mine stone coal near Pittston. The first purchase was made of a Mr. Scott of Pittston, for a sum of five shillings, Pennsylvania currency. Numerous other such investments were made by Dr. Smith throughout the valley between 1791 and 1798, the result being to stamp the purchaser as an enthusiast and to make him the object of ridicule.

He located permanently on the Lackawanna two or three miles above Pittston, at a place since known as Old Forge, from the fact that he and his son-in-law, James Sutton, erected a forge there in 1789, for converting ore of the locality into iron. The forge produced iron for several years, the product being floated down the Susquehanna to market. The ore was, however, lacking in quality and quantity, competition had sprung up at Slocum Hollow, now Scranton, and the enterprise had to be abandoned. Dr. Smith removed up the Susquehanna to a point near Tunkhannock, where he died July 17, 1815, at the age of 91 years.

Miner says, Appendix, p. 43: "Dr. Smith filled a large place in public estimation at Wyoming, for nearly half a century. A man of great sagacity and tact as well as of an excellent education, his influence was extensively felt and acknowledged. For many years he held the first rank as a physician, and from the numerous cures performed the old people thought him unequaled. The extraordinary cases of the recovery of Follet and Hagaman excited wonder, but he was modest enough to say that nature was the physician and made the cure. [Follet had not only been scalped but had been wounded by an Indian spear which penetrated his stomach so that its contents came out of his side.] To great skill in his profession Dr. Smith united a large share of that capital ingredient—common sense.

"Both the partiotic spirit and activity of Dr. Smith are shown by the fact that while he was relied on as chief medical attendant, by the settlement, he yet accepted and exercised the post of captain, commanding in Wilkes-Barré the Reformadoes, as the older men who associated to guard the fort were called. Subsequently in the absence of the younger men in the Revolutionary Army, when numerous troops were stationed at Wyoming, Dr. Smith was still the principal physician."

The following incident, which occurred in 1788, during the Pennamite war, is related by Miner, and shows the scarcity of medicine in those early days: "During an en-

counter between the contending factions at Wysox, one Joseph Dudley was wounded. Pickering thus describes it: 'Dudley was put into a canoe and taken to Wilkes-Barré, a distance of perhaps 60 or 70 miles. The doctor was sent for but had no medicine. I had a small box of medicine that had been put up under the care of my friend, Dr. Benjamin Rush. Of these, upon application of the physician, I furnished all he desired. But Dudley survived only two or three days.'" (P. 420.)

Dr. Smith was twice married. His first wife, and their daughter, Mrs. Dr. Gustin, died of "putrid fever" in 1778. His second wife was Margery (Kellogg) Smith, widow of William Smith. (Harvey Book, 350.) She had been one of the fugitives from the Wyoming massacre, escaping down the river in a boat. Her son William (of whom Dr. Wm. Hooker Smith was step-father) was killed in an encounter of the Yankees with the Pennamites at Wilkes-Barré in 1784. His grave-stone in the City Cemetery at Wilkes-Barré bears the following inscription:

"Here lies the body of William Smith.
Mortals attend, he was called forthwith.
He left the world at twenty-five, .
A warning to all who are left alive.
His zeal for justice, though hard to relate,
It caused his flight from this mortal state."

Dr. Smith had a numerous family.

1. John, "of Kingstown," deeded a piece of land on Jacob's Plains to his brother-in-law, Dr. Lemuel Gustin, in 1776. In 1781 he deeded to his father 36 acres in same locality, formerly belonging to Dr. Joseph Sprague.
2. William, died in Wyoming County after 1845, aged upwards of 85 years.
3. A daughter, married Isaac Osterhout, their son, Isaac S. Osterhout, being the founder of the "Osterhout Free Library" in Wilkes-Barré.

4. Sarah, married James Sutton of Exeter, who had come from North Castle, West Chester Co., N. Y. Sarah was born January 18, 1747, and died in Exeter July 19, 1834.

5. Susannah, married Dr. Lemuel Gustin, and died in 1778, aged 28 years.

6. Olive, a half-sister of Susannah, if not of the others, married Naphthali Hurlbut, one of the early sheriffs of Luzerne County.

There may have been other children. His daughter Sarah was the grandmother of Dr. Andrew Bedford, a practicing physician in old Luzerne County, born in 1800.

Dr. Smith was the possessor of certain eccentricities, one of which was his belief that he had discovered the secret of transmuting base metals into gold. When in advanced life he published a book with the following title: "Alchymy Explained and made Familiar; or, a Drop of Honey for a Despairing Alchymist; collected from the Alchymist's Rock, or Philosopher's Stone. By Wm. Hooker Smith, M. D., Putnam Township, Luzerne County, Jan. 1, 1811. Printed for the author."

Dr. Smith's will, written in his own hand in 1810, says:

"I recommend my soul to Almighty God that gave it to me, nothing doubting but that I shall be finally happy. My destiny, I believe, was determined unalterably before I had existence. God does not leave any of his works at random subject to change, but in what place and when and how I shall be happy, I know not. Now to the sacred spring of all mercies and original fountain of all goodness, to the Infinite and Eternal Being, whose purpose is unalterable, whose power and dominion is without end, whose compassion fails not, to the High and Lofty One who inhabits eternity and dwells in light, be glory, majesty, dominion and power, now and forevermore. Amen."

DR. LEMUEL GUSTIN.

Dr. Lemuel Gustin, sometimes spelled Gustine, was born in Saybrook, Conn., in 1749, and came to Wyoming about the time he attained his majority, which was coincident with the first permanent settlement. Under date of March 10, 1778, he bought of Israel Walker a house lot in "Kingstown." He studied medicine with Dr. Wm. Hooker Smith, and married his daughter. Her death occurred from "a malignant putrid fever," a fortnight before the massacre of Wyoming. A stone in Forty Fort Cemetery, which is part of the historic battle ground, reads thus:

In Memory of Susannah,
wife of Dr. Lemuel Gustin,
and daughter of Dr. Wm. Hooker Smith.
Born at White Plains, N. Y.,
18 Nov., 1750.
Died at Wyoming 12th of June, 1778."

The stone gives Dr. Gustin's name as Samuel, a misprint which has crept into nearly all the books.

Both Dr. Gustin and Dr. Smith were in the Wyoming battle of 1778 and attended to the wounded.

Dr. Gustin was a signer of the articles of capitulation, and is said by Peck to have been the bearer of the flag of truce to the British commander. He was one of the last to leave the bloody field. The British invasion of Wyoming was fixed at a time when the two Wyoming companies were with Washington's army and therefore unable to defend their own homes. After the battle Dr. Gustin and Dr. Smith embarked their families on a raft or rude boat and escaped down the Susquehanna. Dr. Gustin subsequently practiced medicine at Carlisle, Pa., where he died October 7, 1805 at the age of 56 years.

By his first marriage, to Susannah, daughter of Dr. Wm. Hooker Smith, he had one daughter, Sarah, who, in 1792, became the wife of Rev. Nathaniel Ross Snowden, whose father, Isaac, was a prominent Philadelphian during the Revolutionary War. Isaac Snowden had five sons, all of whom were graduates of Princeton College and four of

whom were ministers. (See Historical Record, Vol. 5, page 146.) Dr. Gustin's second wife was Rebecca Parker, of Carlisle, concerning whose family there is an article in Egle's Pennsylvania Genealogies, page 520. Of Dr. Gustin's six children by Rebecca Parker, there were three physicians —James, Samuel and Richard. From this source it is learned that they had four sons and two daughters.

A sketch of Dr. Lemuel Gustin is given in "Men of Mark of Cumberland Valley, Pa." He was, the article says, a man of great strength and activity, as well as of courage. While the Indians were plundering Forty Fort one attempted to take some property or apparel from the doctor. He resisted, and giving the Indian a trip, threw him to the ground. The other Indians were so much pleased at the doctor's courage and activity that they handed him a rope and said, "Indian is a drunken dog, tie him." The article goes on to relate the escape down the river of Dr. Gustin and his little 3-year-old daughter, Sarah, whose mother died shortly before the massacre, and is buried at Forty Fort. Sarah, 17 years later, married Rev. Nathaniel Ross Snowden, then a licentiate of the Presbytery of Philadelphia, who studied divinity at Carlisle.

Dr. Gustin's grandfather died near Augusta, Sussex Co., N. J., and was buried on his own estate. The epitaphs still remaining on the tombs of himself and wife are as follows:

Here Lies ye Body of
John Gustin.
Deceased, A. D. Oct. 15, 1777.
Being in ye 86 Year of his Age.

Here Lies ye Body of
Mary Gustin,
Wife to John Gustin,
70 Years Old.
Deceased, Dec. 3, A. D. 1762.

They were ancestors of the Gustins of Honesdale, to one of whom, the late Geo. W. Gustin, the author is indebted for most of the early history of the family. Thomas Gustin, an uncle of Dr. Lemuel Gustin, married Ruth, sister of Rev.

Anning Owen, a pioneer of local Methodism at Goshen, N. Y., and later in Wyoming Valley. They are buried under the old church at Florida, Orange Co., N. Y.

The following was furnished by the late George Wilmot Gustin, of Waymart, Pa., who gave much study to the genealogy of the Gustin family and whose manuscripts on that subject, bequeathed to the author of this pamphlet, are deposited in the Wyoming Historical and Geological Society:

"Dr. Lemuel Gustin was fourth in descent from Capt. Augustine Jean, born at Le Tocq, St. Ouens, Isle of Jersey, Jan. 9, 1647, son of Edmond Jean, who m. April 25, 1638, Esther, dau. of Jean le Rossignot, of Le Tocq. Both of these families were of great antiquity in the island, and both were 'followers of the sea.' Capt. Augustine Jean, who describes himself as a 'Mariner of the Isle of Jerzey,' came to Reading, Mass., in 1675. The circumstances that caused his name to be changed to John Gustin, without any such wish or intention on his own part, are unparalleled in the history of any family in New England.

"At first his name of Augustine Jean was anglicized by scriveners to John. Afterwards they transposed Augustine Jean to John Augustine and finished by mutilating Augustine down to Gustin. In the 'Genealogical Dictionary of New England' the family is called Augustine, but Mr. Savage explains that the change to Gustan or Gustin was gradual. The old man made his last protest against this barbarous mutilation, on his death bed, July 3, 1719, drawing an enormous AU before the name Gustin, with which his will was signed. This document is found in Sargeant's Wills.

"We must now refer to him as John Gustin. During the latter part of Philip's war he served as sergeant in the company of Capt. Beers, and received a grant of land from President Danforth at Falmouth and bought more with money left him by his father and mother. In his will he describes these lands as 'lying in Casco Bay, at Martin's Point and Pasumscot River,' now the city of Portland, Maine.

"He had married, Jan. 10, 1678, Eliza, dau. of John Brown, of Watertown, and in the following year moved to his new possessions where was born his first son, Samuel, and a daughter Sarah.

"On May 26, 1690, the French, assisted by a party of Abenakis Indians, captured, sacked and burned Falmouth, John Gustin and family being among the very few who escaped from that slaughter pen. He fled to Lynn, where he remained until 1719.

"There were born the following children: John, Nov. 6, 1691; Abigail, Dec. 9, 1693; Ebenezer, Oct. 4, 1696; Thomas, March 5, 1698-9; David, Feb. 6, 1702-3.

"Although the records of the descendants of these children are wonderfully complete, there seems to be lacking positive proof as to which of the above was the grandfather of Dr. Lemuel Gustin. If, as his descendants claim, he was a brother of Dr. Joel T. Gustin of Winchester, Va., then it was the John mentioned and his father was Rev. Alpheus Gustin, born May 29, 1722, married Mary Aberdy and settled in Berkeley, Va., at the outbreak of the Revolutionary War."

Subsequent to furnishing the above Mr. Gustin treated the subject in somewhat greater detail in an article in the Honesdale, Pa., *Independent,* May 31, 1888, as follows:

"The promised publication by the Wyoming Historical Society of a memoir of Dr. Lemuel Gustin, written by Dr. F. C. Johnson, will necessarily give publicity to a part of the family history that I should like to make verifiable.

"Some years ago the Rev. Geo. M. Bodge, A. M., Historian of King Philip's War, called my attention to the singular transpositions of names in the case of my ancestor, Augustine John, sometimes John Gustin, on the official records of Massachusetts. In the Genealogical Dictionary of N. E. the family is mentioned under the heading of Augustine, but Mr. Savage explains that the change to Gustan or Gustin was gradual. This, however, in no way explains the transposition referred to. The second son of Augustine,

John, Jr., my great, great grandfather, was born in Lynn, to which place the family had fled after the sacking and burning of Falmouth, Maine, May 26, 1690. The Lynn records contain the following: 'John ye sonn of John Gustin and Elizabeth his wife, was born, Nov. ye 5th, 1691.'

"In deeds conveying lands at 'Glassenbury,' Conn., to his sons, 1740-45, and on all occasions he signs as above, so we must return to his father.

"In Massachusetts Archives (Philip's War), Vol. 68, page 158: Among the men left at Quabang (now Broodfield) March 4, 1675-6, was Augustine John. At the same time in 'Hull's Journal accounts' he is frequently and invariably referred to as John Gustin.

"June 29, 1677, he executes a deed (Suffolk Deeds 10,131) to the famous Rev. John Brock, of 'Reading,' wherein occurs the following: 'As the same was given and left or otherwise ordered unto mee the said Augustine John by my faather and mother, namely, Edmund Jean and Esther his wife, late of the Parish of St. One (St. Ouens) in the said Island of Jerzey, decd.'

"Jan. 10, 1678, 'John Gustin' married Elizabeth, daughter of John Brown, of Watertown, and grand daughter of Thomas Makepeace, of Dorchester, Bond 145, York records.

"Nov. 20, 1697, John Brown dates his will at Watertown, and mentions 'my son-in-law John Gustin.' Hon. Wm. Wills, in his history of Portland Maine, refers to Augustine Jean, a native of the Isle of Jersey. Afterwards John Augustine, etc.

"July 3rd, 1719, at Falmouth, now Portland, on his death bed, John Gustin signs his will as follows:

"John AUGustin. This will, with a facsimile of the curious mark will be found in 'Sargeant's (Maine) Wills, 1640, 1750.' It forms the basis of all the title deeds to a great portion of the present city of Portland. His lands 'lying in Casco Bay, at Martin's Point and Pasumcot river,' having been granted him by 'the Colony of Massachusetts Bay' for his services in King Philip's War. He bought more with

money left him by father and mother. The record at St. Ouens, of which I give as much as is necessary to make the matter clear, is as follows:

"Edmond Jean de Le Tocq., Oct. 1597, Nov. 12, 1674. St. Ouens, Jersey, married, April 25, 1638, Esther, daughter of Jean le Rossignol; she died June 25, 1672. Children: Katherine, daughter of Edmond Jean, baptised Oct. 2, 1642; Augustine, son of Edmond Jean, baptised Jan. 9, 1647. Marguerite, daughter of Edmond Jean, baptised Nov. 24, 1650. Edmond, son of Edmond Jean, buried April 14, 1676.

"These Jeans and Le Rossignols were families of great antiquity in the island, and both were followers of the sea, one of the latter having traded with the nations at Acadia, North America, as early as 1604.

"I close with a Jersey tradition—dating probably from 1720: 'There were four brothers (children?) and they went at sea. They were captains in the merchant service and trading to America. One of these captains married in America and by that marriage a son was born. When he got of age he came over to Jersey to see if he could claim any of his father's property. So these other brothers of deceased by all appearance gave him a certain amount or sum of money. So he returned to America and since then has not been heard of and by all appearances they live near Le Tocq."—Hacquoil.

GEO. W. GUSTIN."

DR. JOHN CALKINS.

In 1773 Dr. John Calkins, sometimes spelled Corkins, visited Wyoming Valley, having come from New London, Conn. The people, desirous of inducing him to settle among them, drew up a subscription, proposing "to pay Dr. John Calkins, in case he should settle among us in the quality of a physician, the sum set opposite our names, the money to be laid out in land for his benefit and use." The subscription was drawn by Henry Carey, and among the signers are Anderson Dana, whose subscription of £2, 8s, was the

largest. Miner calls him a noted surgeon and says he has not been able to learn the issue of the negotiations. Evidently he did not accept at once, for we find that it was two years before any land was deeded to him. Under date September 11, 1775, Anderson Dana and Jabez Fish convey to Dr. John Calkins as follows: "In consideration that Doctor John Calkins settle in the District of Wilkes-Barré, in Westmoreland, as a physician, do give to said John Calkins one certain parcel of land lying in said District of Wilkes-Barré, bounded as follows—Beginning on ye Main road at ye corner between Lots Nos. 27 and 28 of ye 3rd Division, thence on said road northerly six rods; thence S. 50° E. 27 rods; thence southerly a parallel line with said road 6 rods to said line, thence N. W. 27 rods to beginning, containing two acres and eight rods."

Steuben Jenkins told me that in his opinion Dr. Calkins, though owning land here, did not locate at Wilkes-Barré, but settled at Cochecton on the Delaware, from which point he made occasional visits to this locality. As bearing on this point he (American Archives, 1775, Vol. 3, page 968) made an affidavit December 12, 1775, before Zebulon Butler, justice of the peace, in which he said he had often been at Cochecton and had been acquainted with that settlement 15 years. He was mentioned as "of Westmoreland."

However, it seems hardly likely that Anderson Dana and Jabez Fish would have made the foregoing conveyance unless the grantee had fulfilled the condition of settling in the district of Wilkes-Barré.

He evidently was here often after December, 1775, even if he were not located here, for Henry Blackman Plumb, author of History of Hanover Township, has kindly given me access to the account book of Elisha Blackman, beginning December 6, 1775, running to February 2, 1778, then intermitted for 10 years and continuing again in 1788 and 1789. The charges against Dr. Calkins were for board for self and horse and such supplies as were obtainable from a farmer. Here are some of the entries:

Dr. John Corkins

To Elisha Blackman, Dr.

	£.	s.	d.
1775, Dec. 6—			
3 lbs. Pork	0	1	6
2 bu. Oats	0	3	0
15 lbs. Pork	0	5	0
Lending lines and breach collar	0	6	0
25 bundles Oats	0	6	0
Killing a hog and salting	0	2	0
1776, Mar. 29—			
83 wt. Beef	1	0	6
1 load wood	0	2	0
1777, Jan. 30—			
Cutting and carting two loads wood	0	2	0
Killing a hog	0	1	0
Plowing garden and carting a load of wood	0	6	0
Board five weeks	1	17	6
grain for horse	0	4	0
1 bushel Oats	0	1	10
mending your boots	0	1	6
keeping horse to hay	0	2	6
1778, Feb. 2—			
1 load of wood	0	6	0
May 18—			
Time spent to do your business	0	6	0
1½ bu. Oats	0	2	9
Sep. 29—			
5 days yourself and horse	0	7	6
1789, Oct. 10—			
8 days board	0	8	0
8 days board horse	0	4	0
3 pecks oats	0	1	4
3 days board and horse	0	5	0
1775— CREDIT.			
Cash, five shillings	0	5	0
Cash, two dollars	0	12	0
1788—			
20 lbs. pork at 8 d.	0	13	4
turn with Gore	1	5	0
½ lb. tea	0	2	6
turn with Gore	0	7	0
½ bu. rye	0	4	6
cash, one dollar	0	7	6

Note the changed value of the dollar.

DR. ATKINS.

A skillful young physician, Dr. Atkins, a native of Boston, settled in Kingston prior to 1825. He had been thoroughly educated and had supplemented his medical studies in his own land by valuable experience in the hospitals of Europe. He was pre-eminently a surgeon and achieved local reputation by cutting for stone in the bladder. Col. Charles Dorrance informed me the stone was as big as a walnut and the patient was a Mr. Davenport of Plymouth. Another operation was the excision of portions of the leg bones and the saving of a leg which other physicians had pronounced a case for amputation. The patient was a man named Sutton, in Exeter Township, who had been thrown from a horse, sustaining a compound comminuted fracture of the lower third of the small bones of the leg. The surgeon removed the spiculae, sawed off the projecting extremities, made extension, constructed a fracture box and was rewarded with an excellent result. This operation, like that for stone in the bladder, is common enough in our day, but required a boldness that was rare in the country doctor of the first quarter of the 19th century.

At this time Dr. Atkins was boarding with Col. Dorrance's father. He was aristocratic and was too proud to seek practice. He seemed a disappointed man. Practice came slowly on account of his lack of cordiality, and to intensify his disappointment, his fiancé, daughter of a wealthy Philadelphian named Asley, died.

He bought the Dr. Whitney place (now Samuel Hoyt) in Kingston. After practicing about 10 years in Kingston he moved to New York. He married a daughter of Ebenezer Bowman. Her sister, Lucy E. married Dr. Thomas W. Miner, *q. v.*, and another, Caroline B., married George Denison.

DR. SAMUEL BALDWIN.

Dr. Samuel Baldwin lived in Wilkes-Barré as early as 1810, but afterward removed to Forty Fort or Wyoming. He went to Oxford, N. Y., about 1821, and died there,

somewhere about 1834. He was somewhat eccentric and labored long to invent perpetual motion. He left a machine intended to solve the problem.

In the Steuben Jenkins papers it would appear that he lived in the neighborhood of Wyoming in 1807, as John Jenkins let him have vegetables, grain and meat and several bars of iron. Perhaps the latter was for his perpetual motion machine.

That he was a resident of Wilkes-Barré is shown by the following from a local paper:

Married, at Wilkes-Barré 15 July, 1810, by Rev. Ard Hoyt, Mr. Epaphras Miller, of Oxford, N. Y., to Miss Betsy Baldwin, daughter of Dr. Samuel Baldwin of Wilkes-Barré.

DR. ALDEN I. BENNETT.

Egle's Pennsylvania Genealogies (183) says Dr. Alden I. Bennett was the first physician in Nanticoke, in 1825. He married Mary A. Bennett, daughter of Thomas Bennett, who was born in Connecticut in 1765, and came to Wilkes-Barré about 1770.

DR. OLIVER BIGELOW.

In the *Wilkes-Barré Gazette and Luzerne Advertiser* for January, 1798, Dr. Oliver Bigelow had an announcement that he was practicing in Kingston. He married Esther, daughter of Stephen Harding, and lived opposite the residence of S. B. Vaughn. Practiced for a time on Ross Hill, Plymouth, then at Wilkes-Barré and subsequently removed, about 1800, to Palmyra, N. Y. These facts are learned from Steuben Jenkins.

DR. ETHEL B. BACON.

"Married July 5, 1809, by Rev. Ard Hoyt, Dr. Ethel B. Bacon to Miss Anna Hoyt, daughter of Capt. Daniel Hoyt of Kingston." He lived for a time at Wyoming and removed to Tioga County, Pa.

DR. ANDREW BEDFORD.

Dr. Andrew Bedford was born in Wyoming, Luzerne County, April 22, 1800, and died at Waverly, Pa., in his 90th year. Dr. Bedford came from pioneer medical stock, his grandmother, Sarah Smith, having been a daughter of Dr. Wm. Hooker Smith. Her sister, Susannah, married Dr. Lemuel Gustin. Dr. Bedford's mother was Deborah, daughter of James Sutton and Sarah (Smith) Sutton. Deborah was born in 1799 and died in 1869. He graduated from the medical department of Yale College, and began to practice at Dundaff in 1825, settling in Waverly the next year. He never actively practiced medicine after 1840, but gave his time to public affairs. He was one of the first directors of the Delaware, Lackawanna and Western Railroad. He was a delegate to the constitutional convention of 1837 and 1838. He served as prothonotary of Luzerne County from 1840 to 1846. He was the first burgess of Waverly and the postmaster of that borough. He was a Democrat and a Methodist. He left six children, one of whom, Geo. R. Bedford is a prominent member of the Luzerne Bar.

DR. FRANCIS CAREY.

Dr. Francis Carey, born in 1799, lived between Wilkes-Barré and Pittston, but left the valley in 1831.

DR. EBENEZER CHAMBERLAIN.

Dr. Ebenezer Chamberlain located in Plymouth in 1816, and practiced there until his death in 1866. He was born in Swanzey, Cheshire Co., N. H., Dec. 1, 1790. (Wright 336.) He served as county commissioner from 1843 to 1846, and was a justice of the peace. His daughter Elizabeth was the first wife of John J. Shonk of Plymouth.

DR. LEWIS COLLINS.

Dr. Lewis Collins was born in Litchfield, Conn. He married a daughter of Hon. Oliver Huntington, of Lebanon,

in that State, moved to Salem in 1801, and bought of Moses Dolph the Jacob Stanton farm at Little Meadows. His daughter, Philena, sister of Oristus Collins of Wilkes-Barré, married Dr. Virgil Diboll, *q. v.*

DR. SAMUEL COOK.

In 1777 Dr. Samuel Cook deeded a lot in Hanover Township to John Staples. Whether he was a resident does not appear. The following advertisement is from the *Wilkes-Barré Advertiser,* March 31, 1815:

"Dr. Cook respectfully informs his friends and the public that he has returned to his former residence in Bridgewater, Susquehanna Co., where he will attend to all calls in the line of his profession. All persons indebted to him are earnestly called upon to settle their accounts without delay."

DR. FRANKLIN CRISSEY.

Dr. Franklin Crissey was registered as a physician on the Hanover Township assessment for 1799 (Plumb 250), and his property was valued at $150. This included a horse.

DR. MATTHEW COVELL.

Dr. Matthew Covell was a native of Glastonbury, Conn. He settled in Wilkes-Barré when a young man and practiced medicine there during the remainder of his life, ranking among the first as physician and surgeon. He was born in 1760, and died May 18th, 1813, of what the newspapers called "the prevailing fever." He was a man of devout Christian principles and had the confidence of a large circle of acquaintances. He was a member of the board and treasurer of the old Wilkes-Barré Academy. Caleb E. Wright describes him as "a tall, slim man, with his elbows nearly touching on the back as he stood. He was highly educated and for a long time was the reigning functionary of his profession. He had the field almost to himself."

DR. EDWARD COVELL.

The following is taken from the obituary publication, Dec. 29, 1826:

"Dr. Edward Covell, son of Dr. Matthew Covell, succeeded the latter in his practice. He was born in Wilkes-Barré May 12, 1792, and died Dec. 27, 1826. After having received an early and liberal education he was prepared under the instructions of the celebrated Dr. Benjamin Rush, of Philadelphia, and others of his school for the practice of medicine. He entered upon the duties of his profession at an early age and soon acquired an extensive practice. As physician no man of his age held a higher rank. The suavity of his manners and the kindness of his expressions upon entering a sick room were ever calculated to inspire the confidence of his patients and to soothe the feelings of their anxious friends.

"As a gentleman, his society, company and conversation were highly esteemed by all who appreciated literature, science and morals. As a Christian he was not ashamed to own his Master, and after having publicly professed his religion for a number of years, he spoke of his dissolution with the utmost composure and died in a firm hope of a glorious immortality.

"As a son, as a husband, as a father, and in all the endearing relations of life he was everything the man of worth should be. In short, no man lived more respected or died more regretted than Dr. Covell."

He married Sarah Sterling, daughter of Gen. Wm. Ross, May 7, 1817, born August 25, 1793, died July 9, 1864. Children: Miss Eliza Ross Covell; Martha L. Catlin, born October 11, 1819, died 1871; Mary Bowman, wife of Dr. Wey; Edward M. Covell, attorney-at-law, born Jan. 8, 1822, died Sept. 5, 1864.

DR. MASON CRARY.

Dr. Mason Crary was born in Stonington, Conn., November 15, 1779, of Scotch descent, the family coming over to Connecticut in 1644. His father moved from there to

Albany County, New York, in 1784. He studied medicine in Albany. He came to Luzerne County in 1804, and was married to Desire Beach, one writer says daughter, Steuben Jenkins says sister of Nathan Beach, Esq., of Beach Grove, Salem Township, in 1806. They had these children:

Darwin, who studied medicine and settled in Hazleton.
N. Beach, who went to Ohio.
Mason, who settled in Shickshinny.
Helen, unmarried, and one other.

Soon after his marriage, in 1806, he located in Berwick and practiced there until about 1814, when he removed to Wilkes-Barré, residing at the corner of South Main and Northampton Streets, in what is known as the Perry house, one of the first brick houses in Wilkes-Barré. He thus announced himself in the *Literary Visiter (sic)* of July 22, 1814, then published by Steuben Butler.

"Dr. Crary will attend to the practice of Physic and Surgery in Wilkesbarre and the adjacent town; having had an opportunity of a regular study under the direction of eminent physicians, and having since had an extensive and successful practice for a number of years in city and country. he flatters himself that by assiduous attention, he may merit public approbation."

Here he manufactured for general sale, "Dr. Crary's Anti-Bilious Family Pills."

There was no machinery in those day for working the pills into shape, and the doctor employed the boys of the neighborhood to pinch off from the mass a portion of proper size to roll into a pill, which they did between their fingers and thumb. The pills were said to have been of calomel, jalap and rhubarb.

The doctor was an advertiser and there is little in the Wilkes-Barré local papers during his stay that is of greater interest than his curious advertisements. Here is one:

"Dr. Crary informs the public that he has removed his family to the house lately occupied by Judge Gibson in Wilkesbarre, and has just received a fresh supply of gen-

uine drugs and medicines. Crary's Antiseptic Family Physic in Pills, will be sold by the dozen or single boxes; great allowance by the dozen and the money returned at any time if the Pills are not damaged. Storekeepers will find it to their advantage to keep a supply of the above cheap and safe Family Physic. He is not ambitious of being called a half price Physician, yet he disapproves of raising wages in consequence of ardent spirits being a little higher; he prefers taking a little less stimulus and using more industry; his charges shall be as low as any regular bred practitioner, always favoring the industrious and virtuous poor, and discharge his duty without prejudice or partiality, either religious or political. He will not, under any pretence, call to see other physicians' patients and endeavor to prejudice them against their physician. He gives advice, either written or verbal, gratis, at his shop. Wilkes-Barré, July 1, 1814."

He resided in Wilkes-Barré until 1824, his practice extending for miles up and down the Susquehanna and becoming so arduous as to require an assistant, in the person of Dr. Lathan Jones, p. 57, then a young man starting in the practice of medicine. In 1824 he sold out to Dr. Jones and returned to Salem Township, where he continued in his professional duties to within about ten years of his death, which occurred in 1855, at the age of 75 years. He was a physician of marked success, his ability being not limited to practice alone, but reaching out to the writing on medical subjects. In fevers his success was considered almost marvelous. Dr. A. B. Longshore of Hazleton, is a nephew.

His mother was a Mason, hence his Christian name. She was a lineal descendant of Capt. John Mason, a noted Indian fighter in the early days, who was originally of Dorchester, Mass., then of Windsor, of Saybrook and of Norwich, 1659. John was four years representative, eighteen years Assistant, eight years Department Governor and then Major General, but his reputation as Captain won in the Pequot War, made that title so honorable that he was always called the Great Captain in preference to any of his subsequent official titles.

DR. CHARLES FRANCIS JOSEPH CHRISTEL.

Charles Francis Joseph Christel was born in Munich, Bavaria, February 12, 1776, son of Philip and Cecelia (Roth) Christel, and, immigrating to America when a young man, settled in the township of Salem, Luzerne County, Pennsylvania, in 1797 or 1798. Having studied medicine he removed about 1800 or 1801 to the adjoining township of Huntington, and became the second resident physician there —the first being Dr. Charles E. Gaylord. Doctor Christel's home in Huntington was at the present village of Harveyville.

Doctor Christel practiced his profession in Huntington and neighboring townships until about 1812 or 1813, when he removed to the Township of Hanover in the Valley of Wyoming, and entered into practice there. (This was at Buttonwood, a little south of Wilkes-Barré.)

In 1822 he also began to keep an inn in Hanover, and he was thus employed—as innkeeper and physician—until 1825, when he removed to the borough of Wilkes-Barré. Here, until his death, he owned and ran what was long known as the "Wyoming Hotel"—which stood on the west side of South Main Street, where the present "Christel Block" was erected in 1882.

Doctor Christel was married in 1810 to Elizabeth Stookey, born March 31, 1788; died August 10, 1856, daughter of Benjamin and Martha (Irwin) Stookey of Salem Township. He died at Wilkes-Barré February 21, 1838.

Dr. Christel's daughter Lucinda was the wife of Henry Cady, who for a number of years, until 1831, was one of the principal merchants in Wilkes-Barré. His store was on South Main Street near Northampton, where the Cady building now stands. Another daughter, wife of Augustus C. Laning, died in 1875. (Harvey book, page 814.)

DR. SHADRACH DARBEE.

Under date of November 5, 1777, Wm. Darbee, of Canterbury, Windham Co., Conn., deeds to his son, Dr. Shadrach Darbee of Westmoreland, one-half right in Susquehanna purchase. No other information.

DR. VIRGIL DIBOLL.

Dr. Virgil Diboll came from Colchester, Conn., and after a stay in Cherry Ridge, Wayne County, where he married, he settled in upper Kingston, now Wyoming. He married Philena, daughter of Dr. Lewis Collins, and sister of Judge Oristus Collins of Wilkes-Barré. He removed from Wyoming about 1829 and located at Northmoreland, present Wyoming County, where he died. In a reminiscent article in the Wilkes-Barré *Record,* March 23, 1901, Samuel H. Lynch recalls that there was a boarding school at Northmoreland, Wyoming County, to which boys were frequently sent from Wilkes-Barré. He says Dr. Diboll led the singing in the Presbyterian Church, assisted by his wife and daughter, Arethusa. The doctor would pitch the key on his tuning fork, and starting the tune, he would call to his daughter, "Strike in, Thusa," when the music went off in fine style. Steuben Jenkins says that Dr. Diboll was a great stammerer and afforded much amusement to the children when aiding the tuning fork with his own vocal effort.

As illustrating the varying forms of spelling a name, Steuben Jenkins furnished me the following from the Colchester records, which may have some genealogical value:

Ebenezer Dibel's daughter Elizabeth was born August 8, 1701.

Mary, ye wife of Ebenezer Dibell, died Sept. 21 1703.

Ebenezer Dibell and Ann Horton were married August 29, 1706. Ann born 27 June, 1708.

Ann, the wife of Ebenezer Dibell, dyed the 22 July, 1708.

Ebenezer Dibell and Mary Lewess were married December 30, 1708.

Mary, wife of Ebenezer Dibble, died 5 March, 1736.

George Saxton and Elizabeth Dible married March 22, 1716.

Joseph Pepoon and Mary Dibell married Decr ye 12th, 1717.

In another place the name is spelled Dibbel.

REV. DAVIS DIMOCK.

"At the opening of the century," says Blackman's History of Susquehanna County, "there was living in Exeter, Davis Dimock, born in Connecticut in 1776, his father, David Dimock, a lieutenant in the Continental Army. In 1790 the family had followed the tide of emigration from Connecticut and gone to Wyoming, settling in Wilkes-Barré. In 1801, while carrying on the business of farming and distilling ardent spirits, he was converted, united with the Exeter Baptist Church, receiving baptism from Elder Jacob Drake, the pioneer Baptist minister of the Valley. Two years later he was ordained to the ministry and went from settlement to settlement through the forest preaching the gospel. He had studied medicine in his earlier years and his medical services were frequently called into action. Finding it an aid rather than a detriment to his gospel ministry, he continued more or less to practice medicine during subsequent life. He died in Montrose in 1858, at the age of 82 years."

His wife was Elizabeth, daughter of Benjamin Jenkins, who died from cruelties inflicted on him by the Pennamites in 1787. He was a brother of Col. John Jenkins, and a son of Judge John Jenkins. Benjamin Jenkins' widow (whose maiden name was Affa Baldwin) married John Harding, whose brothers were slain by the advance guard of the Indians, who were approaching to destroy the settlement in 1778. Mrs. Dimock died in 1853, aged 72 years.

In his address (1892) on The Fathers of the Wyoming Baptist Association, Hon. Theo. Hart said:

"Among them many who were converted under the preaching of Elder Jacob Drake, as he traveled over the extensive county, covering what are now Luzerne, Lackawanna, Susquehanna, Wyoming and Bradford Counties, were Davis Dimock, Joel Rogers (who was the ancestor of Dr. Joel J. Rogers) and several others who joined him in the work of the ministry. These itinerants traveled and preached on the same plan pursued by Elder Drake upon his old field on the Hudson River, and their converts were all enrolled as

members of the Exeter Church, which had been organized in 1792, but organized in the several localities as branches, with some of the powers of independent bodies. Davis Dimock was ordained at the yearly meeting in 1803. Upon Elder Drake's death in 1806, Davis Dimock became the recognizer head of the Baptists upon this extensive field, and succeeded Elder Drake in the charge of the Exeter Church. The mantle of this remarkable man had fallen on one worthy to wear it, and the work among the scattered branches prospered in his hands. He was a very successful preacher, naturally well endowed, and his spiritual gifts gave him power with God and men. When approaching age compelled him to give up the arduous labor in which he had been engaged for over 40 years, it seemed that his place would never be filled. He withdrew from active pastoral work in 1846, and spent the closing days of his life with his daughter, Mrs. Lydia [illegible] in Montrose."

DR. JOSEPH DAVIS.

Dr. Joseph Davis located in Wyoming Valley, according to family records, in 1787. He was born July 19, 1732, at New Haven, Conn., and came here from Oxford, in that State. He died at Spring Brook in July 1830, having reached the advanced age of 98 years. Hollister says he died at Slocum Hollow, but this is an error. His wife was Obedience Sperry and they had two sons and five daughters:

Joseph, unmarried.
John, married and lived in Wilkes-Barré.
Sarah, married Ebenezer Slocum.
Lovica, married an Ogden.
Lavina, married Hosea Phillips.
Betsey, married Benjamin Knapp.
Hulda, married a Booth.

In a note to the author a granddaughter, Mrs. Sarah S. Gardner of Dalton, Pa., says: "I do not know whether all his children were born in Connecticut or not, but my grandmother, Sarah Davis, was sixteen years old when they

came to Pennsylvania. Dr. Davis practiced medicine in Wilkes-Barré. Dr. B. H. Throop, in his book says, Dr. Davis was the first doctor in Slocum Hollow, but that is a mistake, I am sure, as I have heard my mother tell of grandmother going to Wilkes-Barré to be treated by her father, as there was no physician nearer Slocum Hollow in 1800, than Dr. Giddings at Pittston.

"I came to Slocum Hollow with my parents, Elisha Hitchcock and Ruth Slocum, his wife, July 5, 1826, a girl of nine years, and I remember very distinctly that Dr. Davis was then living with his daughter, Betsey, who married Benjamin Knapp. They lived at the mouth of the Spring Brook. He died at Mr. Knapp's and I remember very distinctly attending his funeral services at the house, and that his remains were carried to Wilkes-Barré for interment."

According to Hollister, his son-in-law Ebenezer Slocum, and his brother, Benjamin Slocum, purchased land largely at Slocum Hollow, present Scranton, and for 28 years made iron there, as Dr. William Hooker Smith had done at Old Forge. Frances Slocum who was carried into captivity in 1778 was their sister.

The statement, somewhere published, that he was a graduate of Yale College, I think is an error, as his name is not in the list of alumni. He practiced medicine in Wilkes-Barré until 1813, when he removed up the Lackawanna River to Spring Brook. He was a man of fertile resources, as shown by a catheter in the possession of Dr. B. H. Throop, made from the leg bone of some wild bird. His manners are described as eccentric and his appearance as uncouth, but he controlled the surgical practice for a large territory. He was a hoarder of money and after his death quite a sum of silver coin was found secreted.

In the collection of the Wyoming Historical Society (No. 2134) is an ancient compass which is described in the place-book as having been used by Dr. Joseph Davis and others in running the lines of the Seventeen Townships under the Susquehanna Company, prior to 1778. It was presented to the Society in 1873, by his granddaughter, Elizabeth Knapp.

DR. HENRY GREEN.

In 1817 Dr. Henry Green was receiving his mail through the Wilkes-Barré post office. He was located, and had been for some years, at Factoryville. Had a son Norvin and grandson, Douglas N. Green of Scranton.

DR. CHARLES E. GAYLORD.

"Dr. Charles E. Gaylord informs the inhabitants of Kingston and vicinity that he intends removing to Kingston soon to practice his profession as a Physician and Surgeon. He has long been in practice in Huntington Township."

This was the announcement in the Wilkes-Barré *Gleaner* for December 6, 1816, of a gentleman whose medical practice covered nearly three-quarters of a century. He was a native of Wyoming Valley. Mrs. Hartman, in her sketches of Huntington Valley, says that he was probably the first physician who located in Huntington Valley as a permanent settler. He located there as soon as the people felt free from Indian molestation, which, Mrs. Hartman says, was soon after the British market for scalps closed. The following is from the Harvey Book, page 349:

"Charles Eleazer Gaylord, the only child of Charles and Hannah (Andrus) Gaylord, was born in Bristol, Hartford County, Conn., March 21, 1770. He accompanied his parents in 1773 to Plymouth, Pennsylvania, whence he returned to Connecticut with his mother after the death of his father. When his mother remarried, and removed a second time to Plymouth, he went with her. Later he was sent to Connecticut to be educated. His brother Asher perished in the massacre.

"Having received a good common school education, he studied medicine under the direction of Dr. James Henderson, of Connecticut, and then returning to Pennsylvania, settled in Huntington Township (at the present village of Huntington Mills) about the year 1792. He was the first settled physician in this township, and he continued in the practice of his profession there for thirty years or more.

In 1792 and during several succeeding years he was Constable of the township, and for a number of years, about 1812, Justice of the Peace.

"On September 22, 1795, he was married to Esther (born 1777), daughter of William and Margery (Kellogg) Smith, of Wyoming Valley. At the time of the massacre Margery Smith, then a widow, escaped with her infant daughter down the river in a canoe. Returning to the Valley some months later she subsequently was married, as his second wife, to the well-known Dr. William Hooker Smith, of Wyoming.

"Doctor Gaylord and his wife removed in 1822 from Huntington to the village of Plymouth, where he died February 4, 1839, and his widow died October 8, 1854. Colonel Wright, in his 'Historical Sketches of Plymouth,' says of Dr. Gaylord: 'He had an excellent reputation as a physician and surgeon. He was a man very highly respected for his social virtues.' He was considered one of the ablest physicians in the territory of old Westmoreland.

"The only child of Dr. Gaylord was James Henderson Gaylord, born in Huntington Township October 9, 1796."

DR. NATHANIEL GIDDINGS.

Dr. Nathaniel Giddings is said to have settled in Wyoming Valley in 1789, when a lad of 18. According to the "Giddings Family" he was born at Norwich, Conn., September 30, 1761 (but this should be 1771). It has been stated that he graduated from the medical department of Yale College, in 1789, but this cannot be true as Yale had no graduates in medicine until 1814. He located first in Plymouth Township, but after a year or two removed to Pittston, where he practiced medicine until his death, February 10, 1851, at the age of 80. He at Pittston Ferry, and Dr. Robinson at Providence, were the only physicians between Wilkes-Barré and Carbondale.

He was married November 30, 1793, to Lucinda Silsbee, who died November 27, 1815. Children, all born at Pittston:

Louisa, married ——— Decker.
Sarah.
Nancy.
Dr. Nathaniel C., married Mary C. Leach.
Myra, married Stephen Reynolds and Elisha Blackman.
James L., a physician.

At the Baptist Centennial, in 1876, a paper on Dr. Giddings was read by Elder Wm. K. Mott, in the course of which he said:

"In 1792 Dr. Giddings came to Pittston from Norwich, Conn. He was then 21 years old, married, and was the first physician in the settlement. The doctor was called to part with his excellent wife by the hand of death many years before I knew the family, but the cloth on that hospitable table was spread by another whose worth it was my privilege to estimate by personal acquaintance for many years. I knew Dr. Giddings for a period of eighteen years, and spent more hours with him in pleasant and profitable conversation than with any other man now living or dead during the same time. He was a specimen of the complete New England gentleman in his day. His social powers were of the very first order. It was a charm to listen to him. His piety was warm and deep, but not spasmodic. I never knew him gloomy or discouraged in his views of matters, however depressing they might seem. In his profession he stood unrivaled at the time of his advent in this Valley, and for many subsequent years. He had the largest and best selected private library, at the period of my first acquaintance, that I had met with, and he knew what it contained. He manifested a deep interest in all the great questions that agitated the world. He was prompt and punctual in his attendance on all meetings of the Church. Unlike some physicians, he found time to look after the welfare of his patients without losing his place in the house of God. The doctor loved singing, knew how to sing, and did sing to the last. For nearly seventy years he led the singing in the church. Age, for a portion of the time, impaired his voice,

but the heavenly radiance that beamed upon his face, indicating not merely worship but ecstacy, more than compensated for the tremulousness of his voice, in estimating the power of this service for the edification of the church. He also served the church as deacon for many years with great acceptance. Dr. Giddings continued to reside in Pittston until his death in 1851, at the age of eighty. He left a bequest to aid in the erection of the meeting house long afterward built, from which over $3,200 was realized."

Near the Giddings homestead, in Pittston, which was demolished in 1898, was erected the first public school in Pittston, which was taught by John Jenkins. This old school remained until 1810, when Dr. Giddings supervised the construction of another on the same site.

Dr. Giddings was a Baptist in religious faith and was immersed at Pittston Ferry by Elder William Bishop. He was a man of liberal culture, sound judgment, charitable, candid, a reliable adviser and a consistent Christian. He was one of the most devoted lay workers in the Baptist Church at Pittston. This church was established in 1776, but owing to the Revolutionary War its growth was slow and uncertain. In 1787 it had 32 members. Under James Finn, its first pastor, 134 members were reported in 1792. Dr. Giddings appears on the church records as early as 1802, and probably earlier. (Jubilee sermon by Rev. Geo. Frear, D. D., 1892.)

The Baptists were represented with the first party of Connecticut pioneers who undertook to settle the Wyoming Valley in 1762-3. Elder William Marsh accompanied this party in its second visit, as its preacher and school teacher. They located at the mouth of Mill Creek, near Wilkes-Barre, and in 1763 the settlement was utterly destroyed by a force of hostile Indians. Elder Marsh was among the slain. The survivors fled back to Connecticut and no further attempt was made to settle Wyoming Valley until six years later. Baptist missionaries made their appearance in 1773 and later, and in 1776 there was constituted at Pittston a Baptist Church for Westmoreland, a territory comprising the greater

portion of northeastern Pennsylvania. There were 26 members, about half having letters of dismissal from the church at Warwick (then Goshen), Orange County, N. Y.

The grandfather of Dr. Giddings was Captain Nathaniel Giddings, a leading man in Norwich, Conn. Captain Giddings married, June 12, 1728, Mary, daughter of Captain Williams, of England, and their daughter, Mary, born November 28, 1730, became the wife of Rev. Jacob Johnson of Wallingford and Groton, Conn., subsequently the first settled pastor in Wilkes-Barré.

DR. ORLO HAMLIN.

The first physician to practice in Providence was Dr. Orlo Hamlin, who with his young wife, settled a mile north of Allsworth in 1813, but as Dr. Hollister says "this locality, fresh with ozone from the forest, offered so little compensation to a profession without need of appreciation among the hardy woodmen, that the doctor removed the next year to Salem, Wayne County."

DR. SAMUEL JAMESON.

Dr. Samuel Jameson began practicing medicine in Hanover Township in 1799. He was the son of John Jameson, who came to Wyoming from Voluntown, Conn., in 1773. His father was in the Wyoming battle and escaped, but was killed by the Indians four years later, near what is now the Hanover Green burying ground, the spot being marked by a stone erected by his descendant, the late Stewart Pearce, one of the historians of Luzerne County. When the family fled down the Susquehanna River after the Wyoming battle, he, an infant of ten months, was carried away in the arms of his mother. They afterwards returned to Wyoming Valley. The genealogy of the Jamesons is given in the Harvey Book.

Dr. Jameson was born in Hanover Township, August 29, 1777, and died there March 27, 1843. On the 30th of September, 1800, he was united in marriage to Hannah, daughter of Jonathan Hunlock, the knot being tied by Squire James

Campbell. The doctor had three daughters, one of whom married Anderson Dana. (Harvey Book, 565.) He was a Mason, an assessor in Hanover Township, and a justice of the peace. In his later life he was actively identified with the Presbyterian Church of Hanover. Harvey describes him as a man of amiable character and of sound judgment and integrity.

He appears (Plumb, 250) on the 1799 assessment of Hanover, as having 400 acres of improved land, valued at $1500, a house, a yoke of oxen, a cow, a log house, a frame house and a frame barn. He also appears on assessment of 1830 (Plumb, 282). On page 437, of Plumb, his genealogy is given. His sister, Hannah, was the mother of Stewart Pearce, author of "Annals of Luzerne County," whose family monument at Hanover Green, refers thus to Dr. Jameson:

"Samuel Jameson, born in Hanover August 29, 1777, died March 27, 1843, married Hannah Hunlock, born July 11, 1779, died March 6, 1851. Children: Maria, born June 14, 1801, died December 22, 1827; Eliza, born April 22, 1803, died June 8, 1818; Ann, born January 1, 1806, died May 27, 1832, married Anderson Dana. Children: Maria E. Dana, born March 6, 1828, died December 19, 1849; Augusta P. J. Dana, born May 31, 1830, died October 26, 1848. Family extinct." (Egle's Notes and Queries 2d S. ii. 312.)

He lived about one mile north of Nanticoke, on the River Road, since known as the Dr. Harry Hakes' place. Squire Jameson was one of the best and most favorably known of the early physicians, and his was the place where the over sanguine farmers were bled by the same hand that pulled the teeth and ears of our bashful grandmothers. He was a farmer and justice of the peace.

DR. LATHAN JONES.

Dr. Lathan Jones was an early practitioner of medicine in Wilkes-Barré, though how early, I have not been able to learn. He died January 11, 1867, aged 71 years. His children were James (who was identified with the Wyoming

National Bank), William L., Alvin, Caroline (who married Edward Walter), Harriet (who married Thomas Wilson), and Annie, who was unmarried. He practiced medicine for many years on North Main Street, near Union, adjoining the residence of Dr. C. S. Beck, as early as 1824. On the occasion of his death the *Record of the Times* said of him

"For many years Dr. Jones was one of our most respected citizens; a congenial companion, an excellent physician, quiet and unobtrusive, a warm advocate of the temperance cause; he pursued the even tenor of his way and we have never heard he had an enemy in the world. For the past few years he has resided in Abington, but died in Wilkes-Barré while on a visit to his son, James. His was a green old age, but time touched him lightly and his step still retained much of the elasticity of youth."

DR. JOHN McMILLAN.

There was a Dr. John McMillan, a graduate of the University of Dublin, who settled in Exeter Township about the time of the massacre, living on lands belonging to Lieut. John Jenkins.

DR. MORELAND.

About 1814 or 1815 a Dr. Moreland practiced a couple of years in Plymouth and was succeeded in 1816 by Dr. Ebenezer Chamberlain.

DR. ANNA MORSE.

Col. Wright, in his history of Plymouth, says that the first physician residing in Plymouth, so far as he knew, was Dr. Anna Morse, a stout, old lady of 200 pounds, of whom he gives some entertaining reminiscences. Col. Wright says she invariably prescribed for all disorders a hemlock sweat and a dose of calomel and jalap. She also kept a licensed tavern.

DR. GEORGE MINARD.

There was a Dr. George Minard.

DR. REUBEN MONTROSS.

In 1812 there settled in Exeter an eccentric individual, Reuben Montross, whose practice is described as something on the faith cure order. He was reputed to be the seventh son of a seventh son, no daughters intervening to break the magic chain. Later he removed to Northmoreland and traveled through Wyoming County and the region above. Although an uneducated man he had a great reputation for setting broken bones and dislocated joints, and for curing chronic sores. He consequently exerted upon the scattered and superstitious inhabitants of the country a power long felt, and they credited him with almost miraculous gifts. He was thought to have the power of "taking the fire out" of burns.

Here is a reminiscence of an old settler, which shows how he was looked upon by the country folk:

"Yes, I remember Dr. Montross. He went up to Nehemiah Ide's; the old lady had been bedridden for seven years, but before he left her he ordered her to go down and bring him cider from the cellar, and she did. Yes, she was well for years after. A man had a swollen face from the toothache, and the doctor put his finger against his cheek and the swelling left and went into his fingers. He had great power and I do not understand it. He did not give much medicine."

Dr. Hollister says he was born in Duchess County, N. Y., in 1770, and died in Wyoming County in 1857. His second wife was the mother of Angelo Jackson, father of Ernest V. Jackson, of the Luzerne Bar.

DR. THOMAS WRIGHT MINER.

Dr. Thomas Wright Miner, born in Wilkes-Barré, August 23rd, 1803, was the eldest son and second child of Asher and Mary (Wright) Miner. He was a nephew of Charles Miner, the historian of Wyoming, and a cousin of William P. Miner, the founder of the Wilkes-Barré *Record*. He accompanied his parents to Doylestown, where he resided until 1825, when, having been graduated from the Medical School

of the University of Pennsylvania, he returned to Wilkes-Barré to practice medicine, and resided here until his death. He was a man of marked genius. He was not only a skillful and successful physician and man of business, but he was a pleasing writer and a graceful speaker. He wrote ably, and his ideas were always clothed in beautiful language. When the Wyoming Artillerists of Wilkes-Barré, left for the Mexican War, a public meeting was held in the M. E. Church, the soldier boys being presented with Testaments. Dr. Miner made the address. He gave some attention to journalism and edited the *Wyoming Republican* at Wilkes-Barré from 1837 to 1839. A lecture, entitled "Our Country: its Dangers and its Destiny," was a masterly production. For many years he was active in politics—especially during the anti-Masonic era—and in 1832 was a candidate for Congress, but was defeated by Andrew Beaumont. He was an anti-Mason. He married Lucy E. Bowman, born October 12th, 1806; died May 15th, 1842, daughter of Ebenezer and Esther Ann (Watson) Bowman of Wilkes-Barré. Doctor Miner died at Wilkes-Barré October 21st, 1858, and was survived by his son, Dr. E. Bowman Miner, who was a practicing physician in Wilkes-Barré. (O. J Harvey's History of Lodge 61, p. 477.)

DR. WILLIAM R. N. NICHOLS.

Dr. William R. N. Nichols was practising at Abington until his death in 1824.

DR. ISAAC PICKERING.

Dr. Isaac Pickering came to Wilkes-Barré from Massachusetts, and about 1820 married Nancy, daughter of Judge Jesse Fell. He removed from Wilkes-Barré to Catawissa where he practiced medicine for a time, and then moved up to Pittston and boarded with Samuel Fell, on what is known as the Richard Brown place, just below Marcy's. From there he removed to Huntington, where he continued to practice, boarding for a time with Esquire Dodson. From there he removed to Michigan, where he and his wife died,

leaving two children, Elizabeth and Isaac. He was reputed to be a graduate of a medical college, and quite skillful. He was a man of large size, weighing 190 to 200 pounds, with black, curly hair, and of an intelligent, imposing appearance. This information was derived from Steuben Jenkins.

DR. ELEAZER PARKER.

Dr. Eleazer Parker migrated from Connecticut to Great Bend, Susquehanna County, in August, 1807, where he practiced two or three years. He married a daughter of Jonathan Dimon, and in the year 1810 he moved to Kingston, Luzerne County. He was a teetotaler and never prescribed alcohol in a practice of 60 years. In his old age he returned to Susquehanna County where he died about 1877, at the age of about 95 years. It is interesting to note that he had an extra finger on each hand, and, as I am informed by Dr. L. L. Rogers, this peculiarity passed to his daughter, Mrs. Holgate of Kingston, and through her to her children. In 1808 he was appointed the first postmaster in Susquehanna County. He introduced vaccination into Susquehanna County. His practice extended over a circuit of 50 miles. In 1808 he successfully performed tracheotomy and removed a watermelon seed from the windpipe of a two-year old child. During the war of 1812 he was examining surgeon of the 35th Pennsylvania Regiment. (Blackman's History of Susquehanna County, page 86.)

DR. ROBERT H. ROSE.

Not everybody knows that Montrose was founded by a physician. An interesting old volume in the Osterhout Library, is entitled "Letters From the British Settlement in Pennsylvania," dated 1819. The author is "C. B. Johnson, M. D.," though this is believed to be only a *nom de plume.* The book bears both a Philadelphia and a London imprint and was intended to induce English mechanics and others to settle on the lands of Dr. Robert H. Rose, in Susquehanna County, he having purchased 100,000 acres along the New

York line. Montrose (or Mont Rose) perpetuates his name. The book resulted in attracting quite a number of English and Scotch people, but the British Settlement met with many discouragements incident to frontier life, and did not prove to be of very long duration, though many of the present population and descendants of these hardy people. The volume is accompanied by two steel maps, one showing such portion of the United States as was then opened for settlement, extending but little beyond the Mississippi River. The other map shows such portions of Pennsylvania, New York and New Jersey as were contiguous to the British Settlement, indicating also the turnpikes, one leading eastward 110 miles to Newburg on the Hudson, where steamboats were running from New York, a second leading to New York, 130 miles, and a third to Philadelphia by way of Wilkes-Barré. The country was painted as a paradise, and the map predicted great improvements in the way of stage roads which never came. A "proposed canal" connected the Lehigh at about what is now Penn Haven Junction with the Susquehanna near Nescopeck Creek, and another connected the headwaters of the Schuylkill at about Nesquehoning, with the Susquehanna at Nescopeck—two canals from Carbon County to the Susquehanna over the roughest of mountains. Still another "proposed canal" connected the Lehigh at a point near Stoddardsville with the Susquehanna at Wilkes-Barré.

Dr. Rose was a pioneer of whom Susquehanna County may well be proud. Though his schemes were visionary in some particulars he was a generation or two ahead of his time, and it was left for others to profit by his early labors. He lived in splendor in the northern wilderness and his scheme was so promising as to elicit favorable mention from Hon. Charles Miner in his newspaper. Many interesting particulars of Dr. Rose and his British Settlement, together with an engraving of his place in the wilderness, are given in Miss Blackman's History of Susquehanna County.

DR. SILAS B. ROBINSON.

Dr. Silas B. Robinson settled in Providence, Pa., in 1822 or 1823, where he practiced his profession nearly 40 years. So long had he lived in the township and so well was he known for his blunt manners, blameless life and kind heart, even with all his pardonable eccentricities, that his presence was welcome everywhere and his sudden death in 1860 was widely lamented. He was born February 25, 1795, in Hartwick, N. Y. Dr. Throop in "Half Century in Scranton" says he received his diploma from the Otsego Medical Society in 1821. He had a large practice in Lackawanna Valley and neighboring counties. Dr. Hollister said of him:

"During his long practice he always carried his own medicine, which he purchased in Wilkes-Barré, at the nearest drug store, 19 miles away. He always went on foot, no matter how great the distance or urgent the case. A colt once ran away with him and never afterwards would he ride in a wagon. He always carried his rusty turnkeys to twist out teeth. He had two peculiarities, one was to always read the Bible at the bedside of his patient, and the other was his great habit of profanity. He would rarely utter a sentence without an oath. He had no competitor in the field, while Dr. Nathaniel Giddings, at Pittston Ferry, Dr. Andrew Bedford, of Abington, and Dr. Thomas Sweet of Carbondale were his nearest colleagues."

DR. JOHN SMITH.

At a meeting of the Luzerne County Medical Society, held October 21, 1896, Dr. Olin F. Harvey presented a portrait of Dr. John Smith, one of the early members of the society. He subsequently read a biographical sketch, from which the following extracts are made:

"Dr. John Smith of Wilkes-Barré, was a native of Kingston, Luzerne County, where he was born November 4, 1789, the son of Captain Benjamin and Welthea Ann (York) Smith. Captain Benjamin was son of Captain Timothy, who

was son of John. The last named was an original proprietor in the Susquehanna purchase, and was a justice of the peace in Wyoming in 1772.

"Through his mother Dr. John Smith was descended from Lieutenant Thomas Miner, and also from James York, both natives of England, but early settlers in Stonington, Conn."

Miner says in his "History of Wyoming," that Captain Timothy Smith, the paternal grandfather of Doctor John, "was a leading man in the Susquehanna Company, at their meetings in Hartford, before settlement was made in Wyoming. Choosing Kingston for his residence, his name is recorded as one of the '40,' or earliest settlers. * * * Captain Benjamin, father of Dr. John, was a man of singular benevolence, and an admirable nurse of the sick. When, in 1815, the typhus fever prevailed throughout the country, he threw himself in the midst of it, took the disease and died." The "typhus" fever mentioned was denominated by Dr. Edward Covell of Wilkes-Barré, in 1819, as *pulmonic* fever, and was described as having been "epidemic over the country generally" in the winter of 1815-16. There were eleven deaths due to it in Wilkes-Barré—the population of which, at that time, was only seven hundred.

Captain Benjamin Smith was also *Doctor* Benjamin, for he was not only "an admirable nurse of the sick," as Miner has recorded, but was a practicing physician for a number of years in Kingston. He died there January 19, 1816, aged 57 years.

In August, 1815, Dr. John Smith began the practice of medicine in New Troy (now the Borough of Wyoming). For twenty-one years thereafter he made New Troy his home, although his practice was not, by any means, confined to that locality. In 1836 he removed to Wilkes-Barre, and leased his home in New Troy to Dr. George Wurts, who succeeded to a share of his practice on the west side of the river.

When Dr. Smith located in Wilkes-Barré (1836) the population of the borough was only fifteen hundred, and there

were already in practice here at least three active, intelligent physicians—E. L. Boyd, Thomas W. Miner, and Lathan Jones. There may have been others, there certainly were others residing in Plymouth, Hanover and Kingston, who shared, with the Wilkes-Barré doctors, the practice throughout the valley.

Dr. Smith worked diligently in his profession, and for years—even up to within a few years of his death—his field of practice extended from Pittston to Nanticoke. From the outset he had his share of the general practice in the valley, and, owing to his kindheartedness and easy-going ways, had *more* than his share of non-paying patients. He was always particularly kind and attentive to those whom he knew to be poor and in straitened circumstances, and during the Civil War it was his rule to make no charge for professional services which he rendered to the families of men who were enlisted and serving in the union army, unless they were well able to pay for the services.

In 1819 Doctor Smith was appointed, by Governor Findlay, a justice of the peace in and for Kingston Township, and for several years he performed the duties of the office. During the years of his middle-age he devoted considerable attention to politics. In 1828 the anti-Masonic political party sprung into existence. It flourished in Pennsylvania until 1838, during that period many of the prominent citizens of Luzerne County allied themselves with the party, and became active workers and leaders in it, among them being Chester Butler, Oristus Collins, Col. H. B. Wright, Sharp D. Lewis, Dr. T. W. Miner and Dr. John Smith. The party was at its zenith in this State in 1835, when Joseph Ritner, their candidate, was elected Governor. He appointed Dr Smith Prothonotary and Clerk of the Courts.

Dr. Smith held these offices until February, 1839. Upon the adoption of the new constitution in 1838, the office of prothonotary became elective, and in 1840 Dr. Smith was a candidate for it, but was defeated by Dr. Andrew Bedford of Abington.

For several years Dr. Smith was a member of the Borough Council of Wilkes-Barré, and was president of it from May, 1850, to May, 1851. He was also for a time president of the Board of School Directors.

During his residence in Wilkes-Barré quite a number of essays on various subjects were contributed by him to the local newspapers. During the last years of his life there was printed in *The Record of the Times* of Wilkes-Barré, a series of articles written by him, which was denominated by the editor as "chapters of exceedingly interesting history."

Doctor Smith was married in 1814 to Mehitable Jenkins of Kingston, a granddaughter of John Jenkins, Esq., an early settler in Wyoming, a justice of the peace for several years, a representative from Wyoming, or Westmoreland, to the Connecticut Assembly upon several occasions, and prominent in other ways in this locality for several years. John and Mehitable (Jenkins) Smith were the parents of five sons and five daughters. Mehitable (Jenkins) Smith was born March 18, 1796, and died July 6, 1862. Mrs. Gould P. Parrish was her daughter.

Doctor Smith having practiced his profession in Wilkes-Barre for nearly thirty-three years, died here August 24, 1869, in the eightieth year of his age, and his remains were interred in the old cemetery at Forty Fort.

DR. BENJAMIN SMITH.

Dr. Benjamin Smith, also called Capt. Smith, practiced in Kingston. He died there January 19, 1816, aged 57 years. (See John Smith, his son, page 63.)

DR. SCHOTT.

There was a Dr. Schott practicing in Kingston soon after 1800. He was a son of Capt. John Paul Schott.

DR. ELISHA NOYES SILL.

Dr. Elisha Noyes Sill, born in Connecticut in 1761, came with his parents to Wyoming, enlisted in Capt. Durkee's company at the age of 15. Subsequently he returned to Connecticut and became a distinguished physician. (Miner, Appendix, page 50.)

DR. THOMAS SWEET.

There was a Dr. Thomas Sweet in Carbondale as early as 1823.

DR. GEORGE W. TROTT.

As early as 1810 Dr. George W. Trott was practicing medicine in Wilkes-Barré. In September of that year he married Lydia Chapman, a sister of Isaac A. Chapman, the first historian of Wyoming. Their daughter, Sarah Elizabeth, born June 21, 1810, died June 25, 1869, married George W. Woodward, Chief Justice of Pennsylvania.

Dr. Trott was a native of Norwich, Conn. He was licensed to practice in 1802 by the Connecticut Medical Society, certificate signed by James Potter, president, by Avery Downer and John O. Miner, committee for the county of New London.

He studied four years with Dr. Philander Tracy of Norwich, who gave him, under date of Noevmber 3, 1803, the following: "This may certify that Doct. Geo. W. Trott has resided with myself nearly 4 years as a student in physic, etc. His opportunity has been good, both as to theoretic improvement and observation in practice. I think he may safely be confided in as a young man of skill in his profession and of unexceptionable moral character."

In a biographical sketch by the late Judge E. L. Dana, it is stated:

"Dr. Trott was a skillful physician and had acquired a large practice; but in that early day, ere the mineral wealth of the valley was known, or its agricultural resources devel-

oped, amidst a people impoverished by the exhaustive struggle between Connecticut and Pennsylvania, from which they had recently emerged, he had acquired little more than a reputation, a practice and a long list of uncollectible accounts. His death occurred in 1815, when a daughter, then 5 years old, and her widowed mother were left dependent upon their own exertions for support. Mrs. Trott, a lady of culture, then devoted herself to teaching. The daughter in 1832 married Geo. W. Woodward."

The following reminiscence of Lydia Chapman, when she was a young woman of 26, and eight years prior to her marriage of Mr. Trott, is taken from the Wilkes-Barré *Record.*

"Our grandmothers were just as fond of finery as we are, if not fonder, for what Wilkes-Barré woman now would be so eager for a new bonnet as to spend two days and two nights on a stage trip over villainous mountain roads in search of a milliner. An enthusiastic young woman, whose account of such a trip is appended, was Lydia Chapman, sister of Isaac A. Chapman, one of the historians of Wyoming, and mother of the late Chief Justice George W. Woodward. She was 26 years of age at the time and it was not until eight years later that she married."

An entertaining journal of a stage trip from Wilkes-Barré to Easton, made by her in 1802, states that,

She set out from Wilkes-Barré with Mr. and Mrs. A. Colt, on a frosty November morning before sunrise, a sip of hot sling at Ike's proving very acceptable. Stopped at Sock's at noon and proceeded in a pouring rain, finding shelter over night in an humble wayside abode. The next day they got an early start over the barren Pocono, had refreshments at Merwin's, brandy at Bushkirk's and put up for the night at Miller's at the Wind Gap. They reached Easton on the morning of the third day. Here she hunted up a milliner and bought a straw bonnet and did other shopping. Took tea with Mrs. Arndt, received calls from Dr. Covell and George Schott, and breakfasted next morning with Mr. and

Mrs. Dick, also taking dinner there and drinking several glasses of wine. Admired the beautiful home of Mr. Sitgraves. Only one church in town—a German one. The journal breaks off very abruptly, leaving the reader disappointed at its not being continued.

The charming writer of this quaint old diary has been at rest for many years. Not long ago I saw her tombstone and it reads thus

"Mrs. Lydia Trott
widow of
Dr. George W. Trott
born at Norwich Conn
Mar. 16, 1776
died at Philadelphia
Oct. 6, 1857"

DR. JOSEPH VON SICK.

The Wilkes-Barré Federalist, for November 2, 1810, mentions the presence of Dr. Joseph von Sick, and Dr. G. W. Trott speaks a good word for the new-comer. The doctor subsequently got to be treasurer of Luzerne County, and while in that office he re-issued county orders that had been redeemed and for which he had been credited. See Quarter Sessions Records of Luzerne County for indictment, 1815.

He had eleven children. The family left Wilkes-Barré about 1817, 1818 or 1819. Mention is made of him in the Historical Record, volume 3, page 96.

DR. SAMUEL HOLLINGSWORTH WALLIS.

He was a son of Samuel and Lydia (Hollingsworth) Wallis. In 1806, at the age of 22, he located in Wilkes-Barré, but remained only a few months, and then removed to Clinton county.

His father, Samuel Wallis, surveyed the town plot of Wilkes-Barré in 1770. For sketch of the Wallis family see Harvey's History of Wilkes-Barré, vol. 1, p. 653.

DR. ASA C. WHITNEY.

I was informed by Col. Charles Dorrance that Dr. Asa C. Whitney was a New England man and that he came from Bradford County to Wyoming Valley from 1810 to 1815. He followed Dr. Baldwin. He was a son of Elisha Whitney, who moved to Wyoming Valley from 1810 to 1816, when he removed to Wysox, Bradford County. Elisha was a native of Spencer, Mass., where he was born in 1747. He married Esther Clark of that place and they had ten children. Dr. Asa Whitney was a justice of the peace in the Wysox region in 1810. In 1820 he was elected Register of Wills and Recorder of Deeds in Luzerne County. His first wife was Betsey, daughter of Lieut. Col. George Dorrance, whom he married February 21, 1809. They had two sons and a daughter. His second wife was Susan, a daughter of Col. Edward Inman, and their daughter was Mrs. Angelo Jackson, mother of E. V. Jackson, Esq. His sister Elizabeth was the mother of Victor E. Piollet of Bradford County. Dr. Whitney lived in Kingston, where now stands the former residence of Samuel Hoyt, but sold to Dr. Atkins and bought the Sinton, later the McCarragher, property in Wilkes-Barré, at corner of Hazle Avenue and Park Avenue. He practiced there during the rest of his life, his death occurring in 1824, at the age of 39.

Dr. Whitney was regarded as one of the most skillful men in the Valley. A daring surgeon, with rough exterior, but competent and successful.

These epitaphs can be seen in Forty Fort Cemetery:

In memory of
Dr. Asa. C. Whitney,
Who departed this life
Dec. 10, 1824,
Aged 39 years.

In memory of
Elizabeth, wife of
Dr. Asa C. Whitney,
Who departed this life
April 20, 1820.
Aged 41 years.

[*Extracts from H. L. Fisher's "Olden Times."*]

When the ever-famous healing art was in its infancy,
It often happened on the score of sheer conveniency,
That the family doctor also doctored, family, horse and cow,
For doctors were much *rarer* then that the rarest of them now.
They always rode on horseback, and gen'rally the gallop,
With saddle-bags and pockets full of calomel and jalap,
And Epsom salts and senna too, and hellebore and borax,
And herbs and teas for stomach-aches, the bowels and the thorax;
And aloes for cathartics mild and ipecac-emetics,
Peruvian bark in Holland gin for gentle diuretics.

If the case was chills and fever, or of trouble in the head,
The first thing to relieve it was to have the patient bled;
And next to have him blistered, just for counter-irritation,
Then twenty grains of mercury for final salivation.

The blacksmith and the tailor and Saint Crispin's cobbling snob,
By turns each took his turn to do a little healing job;
To let, or check, or stop the blood, or break the spell of witch,
While each one had the *only* salve that would surely cure the itch.
There were hundreds of home-remedies for all kinds of complaints—
All better than the best faith-cure or the prayers of the saints;
If the children had the measles or the matter was in doubt,
They had to drink sheep-saffron tea to drive the rascals out.

And if a child was liver-grown, or seemed to have a spell,
Three times put through a horse-collar would always make it well;
The blooming youths who freckels had, went on the first of May,
And with the early virgin-dew they washed them all away.

SOME THOUGHTS ON GONORRHOEA; ITS RESULTS AND TREATMENT.

BY DR. B. J. WEATHERBY, WILKES-BARRE, PA.

READ FEBRUARY 1, 1905.

"Just a little dose." That is a familiar expression to all who treat genito-urinary diseases. Only a little dose, that is all. A recent writer has said "As well say only a little cancer,—only a little consumption." Gonorrhoea is not a disease to be made light of, nor one to be treated in a careless, haphazard manner. Few diseases are really more disastrous or far-reaching in their evil effects. It is the most common cause of stricture of the urethra; and a man with an old, deep stricture is truly an object of pity. In his old age he will be sure to have cause to remember the joys of his youth, and, like Solomon with his "million wives," will be apt to reflect, too late, that it is pretty much all vanity and vexation of spirit. How many of our old prostatics with the usual sequelae of cystitis, pyelitis, etc., give a history of having been ardent worshipers at the shrine of Venus, perhaps many years before? White and Martin say that the common causes of prostatitis are the passing backward of gonorrhoeal urethritis and the passing of unclean instruments. How many cases of Bright's disease can be traced back to an old gonorrhoea? When we remember that from fifty to seventy-five per cent. of the male urbanites, at some period in their lives, have had gonorrhoea, and when we think of the many and frequent complications and sequelae of this omnipresent disease, we feel like taking off our hats to the festive gonococcus and crowning him king of all the bugs. Stricture, enlarged prostate, prostatic abscess, cystitis, pyelitis, and even peritonitis,—any one of them is grave enough and any or all of them may be directly caused by "just a little dose." Then there is orchitis and epididymitis, bad enough in all conscience if only one side is affected; but threatening to both the home and the state if both sides are affected, and the inflammation runs high enough to obliterate the spermatic ducts, as it is very liable to do. That man can never be a father,—and all on account of

a little dose, which, the rounder says is no worse than a bad cold, and which many druggists feel perfectly competent to treat. The disease is not limited to the genito-urinary organs, either. The gonococcus has been found in localities remote from the seat of primary infection; in the spleen, liver, pleura, kidneys, endocardium, brain, spinal cord, joints, sheaths of tendons, periosteum, in the pus of abscess cavities,—in fact, anywhere in the body.

The idea that gonorrhoea is a local disease is no longer held by progressive thinkers along these lines. We are all familiar with gonorrhoeal rheumatism, and know its preference for the left knee or ankle joint. The synovial fluid taken from such a joint contains gonococci. This in itself is proof that the disease can become constitutional. Here again it may rise to the dignity of a question of home or state. Unless very radical and persistent treatment is carried out for quite an extended period, gonorrhoea may lie latent in the male generative organs for a long time after apparent cure, and be capable of transmission to the female. It is a pretty tough thing to take a pure, innocent, confiding girl in wedlock and then infect her with a disease that may result in endometritis, salpingitis, ovaritis or even a fatal peritonitis. She may be compelled to undergo a hazardous surgical operation costing her her ovaries, tubes and womb, or she may make a tedious partial recovery with Fallopian tubes hopelessly and permanently closed from the exudative inflammation. In either case no child will ever call her mother; and all as the result of a little dose. Even if the uterus and annexes are not so badly damaged as to make pregnancy impossible, a third party, the child born of a gonorrhoeic mother is very apt to be a sufferer. It is estimated that fifty per cent. of blindness as it exists to-day is caused by gonorrhoea, and many of these cases are the result of congenital gonorrhoeal opthalmia. Gonorrhoea of the uterine cervix may give rise to so few symptoms as to be actually unsuspected. A little menstrual difficulty, with a slight case of leucorrhoea aggravated at each menstrual epoch may be all the symptoms the woman experiences. But the gonococci are in sufficient number to cause

an opthalmia that may rob the child of its sight. This is the danger period with the woman also. It is at this time that gonococci are awakened to great virulence, and a rapidly developing metritis, salpingo-ovaritis or fatal peritonitis may follow an abortion or a confinement at term. It is very likely that in such a case, the first child will also be the last. This is so well recognized by our German brothers that they have a phrase which means "one-child sterility."

Perhaps there is no more common cause of extra-uterine pregnancy than this same little dose. Paul Petit has so well expressed this fact that I will quote his exact words: "If this nuptial microbe, apparently benign, is so sufficiently attenuated as to not produce peritonitis, to not shut the tube at either of its ends (closure fatal for the race but salutary for the woman); and if, nevertheless, it happens that its delicate cells have lost their vibratile cilia charged to assure the advance of the fecundated egg, this is arrested in the channel through which it cannot pass, and, notwithstanding the heroic efforts of nature to produce a compensatory hypertrophy, the drama still proceeds; in the place of becoming enfeebled, the virulence of the microbe becomes catalysmic; extra-uterine pregnancy, much more common than is usually supposed, is constituted; the infant dreamed of, still in its embryonic state, has become for its mother *a malignant tumor,* and if it does not kill her suddenly by internal hemorrhage when in apparent health, which is fortunately quite rare, too often it offers her to the reparatory knife of the surgeon, and, in the more fortunate cases, immobilizes her for many months on a bed of suffering."

We must not get the idea that all men who have had gonorrhoea are monsters, and that all women who have been infected are angels. The woman is as often to blame as the man. I have had women say to me "a woman could not have these diseases if some mean, low, man did not give it to her. That is about true; but neither would a man get the disease if some woman did not give it to him. No man can make a strumpet of a woman if she does not naturally have leanings in that direction. If the first improper advance on the part of the

male is positively and decidedly repulsed there generally will be no second attempts. And often the female is as much the aggressor as the male. Public speakers and reformers in the church are apt to want to mob anyone who makes such a statement as the above, but it is nevertheless true. Go out of an evening in our own city and walk leisurely around the Square with your eyes open. Watch the glances of the girls as they saunter between the ranks of willing young men; watch not only their glances, but listen to their speech, notice their studied display of hosiery and skirts, and a hundred other little arts and practices of the gentler sex, and then go home and reflect. When our young men attend social gatherings and mix freely with girls and women whose costumes seem to be largely remarkable for their scantiness, we who know, expect the sexual impulse to be quickened, be the man ever so pure. It is simply Nature's most common law that it should be so. Add to the bare arms and neck—a good deal more than neck generally—the bodily contact in the heated waltz, and both the male and the female cannot help experiencing sexual emotions, unless they are more or less than human. The theatre of to-day is almost as bad. Young people witnessing the operas that are now so popular, in which the "show-girl" shares the limelight equally with the star, while the chorus girls are clad in tights below the waist and in the style of an ancient Greek slave above,—"Nature unadorned," become familiar with what should be sacred, and, yielding to these suggestions, soon lose their modesty, and get a good start on the road that leads to loss of chastity. Under all these influences these matters become common, and to me the only wonder is that people are as pure as they are.

When man was created, in order to perpetuate the race, the sexual impulse was made the greatest of all passions. If, added to the passion itself, we have ignorance (not ignorance in the general application of the word, but as applied to the possible serious results of what is commonly thought to be a trivial affair, amounting to only a little discomfort and possible pain for a short time), indifference, natural untidiness and a

great many other things that help to convey the disease from one person to another, we must throw the mantle of charity over our erring brothers and sisters in a great many instances.

So, when a patient presents himself for treatment, we must look upon him with charity; pity rather than condemn, and try to make his cure as speedy and permanent as possible. We must give the case the same attention we would were it consumption or typhoid fever. We must educate him in sexual matters, and enlighten him as to both the present and the future possibilities of damage from his disease. We must tell him of its contagiousness and of the different modes of contagion. We must warn him not to marry until several months have elapsed from the time of the last symptom of the disease. We must impress upon him the necessity for keeping up his treatment over a considerable period of time, even if it causes him to think we are working him for a fee. Better lose a patient than leave our duty undone in so grave a matter as this.

Gonorrhoea cannot be cured in a day. Some authorities go so far as to say it cannot be cured at all. This is not true. With the improved methods of treatment now in use it can be completely and permanently cured in a reasonable length of time, if the patient will do his part, and it lies almost as much with the patient as with the doctor whether the case runs a favorable course or not.

Like all other diseases there are different grades of intensity, varying with almost each individual case, and not all cases of urethritis are gonorrhoea. A great many of these cases are those of simple urethritis, but presenting all or most of the symptoms of true gonorrhoea in their inception. Such cases usually get well in a few days, and, if they are diagnosed gonorrhoea, are classed among the quickly cured cases, so helping to maintain the popular idea that gonorrhoea is no worse than a bad cold. A microscopic examination of the pus should be made in every case, and, unless gonococci are found, the disease should not be called gonorrhoea. Recently a patient came to me bringing his own diagnosis. He said he had been under treatment for nearly a month by another physician whose office

he visited almost daily. On examination I found a large periurethral abscess about two inches back of the glans, which I at once opened, with the result, that in a few days with no other treatment than that directed to the abscess, the man was entirely well. He told me his family physician had never seen his penis, but had asked him questions and prescribed according to his answers. Not only should a microscopic examination be made of the pus in every case, but a careful inspection of the penis, with palpation of the testicles and inguinal glands should always be practiced.

To be successful, much of the treatment should be applied by the physician himself. If one is inclined to look upon the treatment of these cases in an esthetic rather than a scientific light, one is tempted to simply write prescriptions and let the patient apply them. After several years of close study and observation of results obtained by different methods of treatment I am sure that, if the physician wants speedy and permanent cures, he must do a great deal of the work himself. At the head of the list and of the most importance in my experience is the irrigation treatment. Since I have treated practically all my cases by this method, the average duration of time under treatment has been diminished from one-third to one-half. I have also found that I have fewer complications. Orchitis and epidydimitis are much less frequent than was the case before I employed the irrigation method. I have also used many of the newer remedies by irrigation, but have always gone back to permanganate of potash, in the strength of from five to fifteen grains to the quart in acute cases. In chronic cases I find nitrate of silver, from five to ten grains to the quart more efficacious.

The manner of using the irrigator is of the utmost importance, and can only be learned by actual practice. The amount of pressure, the strength of the solution, the intervals between irrigations, etc., vary with each individual case, and at different stages in the same case, making it a question of judgment on the part of the operator. As a rule, in acute cases, irrigations with a hot, weak solution of permanganate of potash with a low

pressure irrigating only the anterior urethra, should be made once a day—twice in some cases. As the disease progresses and the inflammation subsides, both the strength of the solution and the pressure should be increased so that the solution passes the cut-off muscle and fills the bladder, thus irrigating the posterior as well as the anterior urethra. If the posterior urethra is not treated many of these cases will continue indefinitely. If the tendency is to become chronic, complete irrigations with a hot solution of nitrate of silver, five to fifteen grains to the quart, given every second or third day has a very good effect.

In conjunction with the irrigation treatment the patient should use a hand injection several times a day to keep the anterior urethra as clean as possible in the acute stage, and for its astringent action later. There are many gonococcicides on the market, and a new one is hatched every few days. Many of them are good and a few of them excellent. Argyrol, in a five to twenty per cent. solution makes an excellent injection. I believe it is one of the best gonococcicides we have, and possesses the very excellent quality of being unirritating, even in very strong solutions; but it makes a black, disagreeable solution to handle and leaves tell-tale stains on the linen. Mercurol in from one-fourth to one per cent. solutions is an excellent gonococcicide and does not stain the linen. Protargol in one-half to two per cent. solutions is equally if not more efficient and does not stain. It has become something of a stand-by with me. The silver preparations seem to possess the greatest gonococcicide properities. Permanganate of zinc, one-half to one-fourth grain to the ounce is very good, especially when we want a slight astringent action. Picric acid, one-half grain to the ounce, is one of the very best injections we have in the acute stage, but it stains the hands and linen a persistent yellow. The list could be extended almost *ad infinitum*. However, it is best to select three or four of the best remedies and learn to use them well. New remedies, lauded to the skies, are coming out every few days, but they are no better than some of the older and better tried preparations.

As to the astringents in the sub-acute and chronic stages, none are better than zinc sulphate, zinc sulpho-carbolate, bismuth sub-nitrate or sub-gallate, hydrastis and a few others, mostly old-timers. As a rule I do not believe in polypharmacy in the use of these remedies, although now and then it seems better to combine two or more of the different astringents—as bismuth and hydrastis, or bismuth, hydrastis and zinc sulpho-carbolate or sulphate. One thing I want to warn against and that is the use of astringents too soon. They may stop the discharge for a time, but in a few days it will come back, repeating this over and over to the disgust of the patient and the church-standing of the doctor. We must be sure there are no gonococci present and that the discharge is simply mucus, a sort of urethral catarrh, before we begin the use of the astringents.

There are just two things to do in the treatment of gonorrhoea: first get rid of the gonococci; next allay the inflammation. Here is the rule—antiseptics for the first, astringents and sedatives for the second, and *be sure you reach the seat of the disease.* Some have the idea that injections should not be used in the beginning of the attack. Gonorrhoeal urethritis is an infective inflammation, therefore it should be treated as far as possible like any other infective inflammation. My records show that the earlier irrigation is begun the shorter is the course of the disease, not to mention the comfort it gives to the patient. One argument against its early use is that it forces the gonococci into the posterior urethra. If it does (and it will not if properly used) the large quantity of fluid used—always a quart at each sitting—will in turn wash them out again. Besides, in nineteen cases out of twenty, the germs reach the posterior urethra anyway. Why should they not? There is an open and direct thoroughfare and they seem to have the right of way. The same is true of orchitis and epidydimitis. I see more cases of these complications that come to me primarily as such, after having been treated for several days or weeks by the druggist or rounder, than occurs in my entire practice where I have the patient from the first and begin irrigations as soon as the gonococci are discovered.

Another fallacy is that irrigations and injections cause stricture.. Stricture is the result of a long continued inflammation, and follows poor or neglected treatment. A proper injection intelligently used cannot cause stricture.

As to internal treatment, I believe it holds a very unimportant place in the cure of the disease, but it does a good deal to make the patient comfortable. The urine can be made bland and unirritating by the administration of alkalies in the acute stage, and some degree of asepsis can be obtained in the urine by the administration of urotropin, salol or methyline blue. The last two nearly always agree, but urotropin very often will be found to be irritating. It makes the urine too acid. Later, when the sub-acute stage has been reached, santal, cubebs, kava-kava, and copaiba will benefit. I have noticed that nearly all my cases of obstinate chronic urethritis (the so-called gleet) have been in men having long, tight fore-skins, and consequently a damp, congested, dirty glans. Circumcision has done more to cure such cases than all the other methods combined. A few cases of the obstinate, chronic, recurring type only yield after massage of the prostate gland and seminal vesicles, followed by complete irrigation. The use of graduated sounds will cure many of these old cases, but should never be resorted to until all active inflammation has subsided. I have used the urethroscope in a good many of these obstinate cases, but find it more useful as an aid to diagnosis than as an aid to treatment. In my opinion it is a much over-rated instrument.

The patient should be given rigid rules to regulate his daily life and habits. We can seldom or never put him in bed and give him an exclusively milk diet. If we could, at least half the cure would be accomplished. Most of our patients must continue their daily work, which often involves hard labor and exposure. We must take our patients as they are, not as we would have them. They must be told to make their work as light as possible, and to avoid straining and lifting; be careful not to take cold; to spend as many hours in bed as possible; to drink large quantities of pure water or milk; to indulge very moderately in the use of tea, coffee, and tobacco, if their use

cannot be entirely stopped; to refrain from the use of all intoxicating beverages; to eat only plain, easily-digested food with a moderate amount of the red meats, and not to eat fried foods, pastry, fats, asparagus, tomatoes, rhubarb and acids in general; to keep the bowels open with salines, and to avoid as much as may be the society of the opposite sex. Sexual matters must be relegated to oblivion. For a gonorrhoeic to fondle a woman or dance with her and excite the passions is to prolong the disease. Very often this is one of the most difficult rules to enforce.

This plan of treatment, intelligently and carefully carried out, would yield a large per cent. of permanent cures in a reasonably short time, and will be accompanied by fewer complications than any other method with which I am familiar.

DISCUSSION.

DR. GEIST.—For a general practitioner to discuss a specialist's paper is difficult. Everybody thinks he can treat gonorrhea. Its importance is being recognized and it will soon be classed with consumption.

DR. WALTER DAVIS.—Gonorrhea is difficult to treat. As one of its more serious effects I may cite a case of salpingitis following labor, that could be traced to the husband.

DR. FELL.—I do not treat these cases without a fee in advance. I do not use irrigation to the extent recommended by Dr. Wetherby. Men are the sole cause of the disease being scattered and women have better morals than men. I believe all cases in men should be reported to the police. The ravages of gonorrhea and syphilis were secondary only to tuberculosis Further, the most difficult part of these cases is the trouble of getting the fee.

DR. WETHERBY (in closing).—The object of the paper was to bring out the importance of the disease from a social standpoint. As to fees, I find that my collections are better for these cases than in my general practice. My average is 94%.

ACUTE OSTEOMYELITIS.

BY DR. A. TRAPOLD, WILKES-BARRE, PA.

READ FEBRUARY 15, 1905.

Acute Osteomyelitis is the most serious and frequent bone-affection of children and young adults. The disease, although known to the older writers on medical subjects, being a frequent complication of compound fractures and wounds communicating with bone before the use of antisepsis and asepsis in surgery, has only been properly recognized during the second half of the nineteenth century, and the knowledge of its true aetiology is even of more recent date.

Chassaignac, who first gave a clear description of the disease, called it diffuse spontaneous osteomyelitis, also typhoid of the bones, on account of the resemblance of some of its symptoms with those of typhoid fever. Klose named it meningo-osteomyelitis, Gosselin, osteomyelitis epiphisaria on account of its frequent seat in the epiphysis of long bones. Giraldes described it under the name of phlegmonous periostitis. Wernher, under that of osteochondritis epiphysaria. Roser called it pseudorheumatic inflammation of bones and joints. Waldeyer, panostitis. Volkman, osteomyelitis spontanea and periostitis maligna. The name under which it is described most frequently at the present time is, acute suppurative osteomyelitis, thus indicating that the pathological process consists of an acute inflammation of the marrow of bone, terminating in suppuration. The knowledge of the true aetiology of this disease, as stated above, is of recent date. Pasteur in 1880 showed that the same germ which causes furuncles or boils in the skin is also present in the pus of acute osteomyelitis and speaks therefore of furuncles of the bone, and Becker, who first successfully produced the disease in animals by inoculating them with the staphylococcus pyogenes aureus, regarded this micro-organism as the specific cause of acute suppurative osteomyelitis.

Later researches failed to substantiate the claims as to a specific cause. Other observers found the staphylococcus pyogenes

albus, the streptococcus, more rarely the typhoid and coli-bacillus and others to be the causative agents. The present state of our knowledge warrants us therefore in saying that osteomyelitis is an acute infectious disease; that the staphylococcus pyogenes aureus, though by far the most frequent, is not the only cause of the affection, and that the disease under conditions favoring their growth can be produced by any of the pus forming cocci either alone or as a mixed infection.

The virus enters the circulation either through a small wound, an abscess of the skin or through the respiratory and digestive tract, is carried by the blood to the medullary tissue and deposited near the epiphyseal line of a bone. This is favored by the anatomical arrangements of the parts.

Warren, in his Surgical Pathology, says: "A glance at the anatomy of the ends of the long bones throws some light upon the selection of this particular point at the seat of suppuration." This region is called by Ollier "the zone of selection of pathological processes." Near the ephiphyseal cartilage, which separates the diaphysis or shaft from the epiphysis there exists in growing bone a newly formed spongy tissue very vascular and connected with the cartilage by a spongy layer of tissue which is not yet bone, but which does not possess a cartilaginous structure. In this part of the organ the most active changes take place during the period of growth. The medullary substance is very vascular. The capillaries are without walls and their volumen, according to Neumann, is about four times as great as that of the smallest arteries, so that the blood current is very slow,—a condition favoring the deposition of micro-organisms.

The germs, if not in large number and of great virulence may become destroyed, thus not giving rise to further trouble, but if the vitality of the part is lowered by trauma, exposure to cold and wet, or the general system is weakened by disease, they find favorable conditions for growth and produce characteristic pathological changes.

The pathological changes observed are as follows: The marrow becomes reddened and increased in consistency. The fat-

cells disappear, the parts become infiltrated with leucocytes and some red blood-corpuscles. These inflammatory effusions finally soften and form pus. The pus spreads along the medullary canal, traverses the Haversian canals, collects under the periosteum and separates this for greater or less distance from the bone. It may break through the periosteum, burrow between the muscles and finally perforate the skin. The bone, deprived of its blood supply and surrounded by pus, dies, to a greater or less extent, according to the severity of the disease, and forms a sequestrum.

The formation of a sequestrum practically finishes the first stage of the disease. The dead bone now acts as a foreign body, sets up a reactive inflammation. Nature tries to get rid of it. Granulations arise from the medulla and inner layer of the periosteum, widen the Haversian canals and loosen the sequestrum by pushing themselves between the living and dead bone-tissue. This process, as a rule, takes from four to six weeks.

While this separation takes place there is also a formation of new bone from the inner surface of the periosteum. This newly-formed bone gradually surrounds the sequestrum and is called involucrum. One or more fistulous tracts (cloacae) generally pass through the involucrum to the sequestrum and serve for the purpose of carrying off the pus. The amount of newly-formed bone varies in different cases and can fail entirely if the inner layer of the periosteum has been destroyed by the disease.

As mentioned before, acute osteomyelitis is a disease of growing bones. We find it therefore most frequently between the ages of six and twenty-two years, and in the long bones where growth is most active.

Statistics, Lannelongues', of 100 cases, show the disease:

9 times under 5 years.
7 times from 5 to 10 years.
41 times from 10 to 15 years.
30 times from 15 to 20 years.

and once respectively at 21 and 22 years. In the remaining

case the age is not given. Girls are less liable to be affected by the disease than boys, probably because not so much exposed to the predisposing causes, trauma, cold and wet.

The relative frequency of the bones is indicated by 141 cases compiled by Helfrich:

The tiba was affected 66 times, the femur 45 times, the humerus 20 times, the radius 6 times and the fibula 4 times.

Although, as shown by this, the principal seat of osteomyelitis is in the long bones, the short bones are sometimes, though rarely, affected.

The symptoms of acute osteomyelitis are those of a severe septic infection, but vary according to the intensity of the disease. They may be divided into general or systemic and local. In very acute cases the general symptoms may so overshadow the local ones that it is practically impossible to make a diagnosis. The patient starts with a severe chill and soon passes into a typhoid condition, with high fever, rapid pulse, low muttering delirium, picking at the bedclothes, dry tongue, sordes on the lips, and dies before the local disease has time to develop sufficiently to be recognized. I saw one such case. Several years ago I was called to a boy nine years of age. His father gave me the following history: The boy had been wading in the water and got chilled, next day he complained of pain in his right leg. His parents thinking it was rheumatism gave him some simple remedies and put him to bed. As he continually grew worse they sent for me the following morning. I found the little sufferer in a half stupor, muttering to himself and picking at the bedclothes. His tongue was dry and glazed, and he had a temperature of 105½, and a pulse of 150. On examination, the leg did not show any swelling, but it seemed to be very painful, as the patient moaned when I tried to move it. Several of the inguinal glands were enlarged and indurated.

This boy died within twelve hours from the time I saw him, and, considering the history and symptoms of the case, I believe it was one of these extremely malignant types of osteomyelitis. In the moderately severe cases the disease is usually

ushered in by a chill, there may also be vomiting, the temperature rises to from 103 to 105, and sometimes even higher. The pulse is accelerated. In fact there are all the symptoms of severe infection. The affected limb is painful and swollen. The skin reddened and slightly oedematous. There is frequently a tender spot near the epiphyseal line, indicating the seat of the trouble. There may be abnormal mobility between the shaft and the epiphysis showing that the disease has caused a separation of these parts from each other. The bone seems to be somewhat thickened, the subcutaneous veins are more prominent. The neighboring glands are frequently enlarged and tender to the touch. The contiguous joints may be secondarily affected by serous or purulent inflammation. Deep fluctuation can usually be felt; this becomes more distinct after the pus has broken through the periosteum and burrowed between the muscles.

Diagnosis.—The diagnosis of acute osteomyelitis as a rule presents no special difficulty. The history, sudden onset of the disease, the severe general symptoms, pain, swelling, and tenderness of the affected limb to the touch, will enable us to arrive at a correct understanding of the case. The severe form, on account of the prominence of the general and absence of the local symptoms, is frequently diagnosed as typhoid, but typhoid has not the sudden onset of osteomyelitis and the history and a careful examination of the patient will help us to avoid this mistake.

Osteomyelitis, especially when it has its seat in the epiphysis, and the joint is early affected, may be mistaken for rheumatism, but rheumatism generally affects more than one articulation and the pain and swelling are limited to the affected joints, besides the general symptoms are less severe than in osteomyelitis.

The differential diagnosis between osteomyelitis and phlegmonous inflammation is at times absolutely impossible, but this is more of theoretical than practical importance, for both conditions require the same treatment, a free incision and evacuation of the pus; after this is done the diagnosis can usually be made without special difficulty.

Prognosis.—The prognosis of acute osteomyelitis depends on the extent and severity of the disease. Most of the malignant cases with pronounced typhoid symptoms prove fatal within a few days. Later on septic thrombo-phlebitis leading to fatal pyaemia, and fat-emboli may cause death. The prognosis is also greatly influenced by prompt surgical interference. Before the use of antisepsis and asepsis in surgery the mortality of this disease was very high. Lueke lost eleven out of twenty-four cases. Kocher nine out of twenty-six and Demme four out of seventeen. With the advent of modern treatment the results have become markedly better, not only in the saving of life, but also in preserving useful limbs. Formerly amputation was frequently done for this affection, but at the present time this is rarely necessary, though stiffness, ankylosis and contracture of joints cannot always be avoided, even with the most skillful and attentive treatment.

The treatment of acute osteomyelitis is strictly surgical, and as soon as the case is diagnosed a free incision should be made down on the diseased area, enough bone tissue chiseled away to open up the abcess cavity thoroughly. The diseased marrow should be scraped away, the cavity washed out with some antiseptic solution and packed with iodoform gauze. If the medulla is extensively affected it may become necessary to make several openings in the bone, in order to be enabled to remove all infected tissue. If the neighboring joints become red, painful and swollen, they should be aspirated under strict antiseptic precautions, and if pus is found a free incision should be made and the joint drained; it may be necessary to make several openings in order to establish free drainage.

This procedure will generally carry the patient over the acute stage of the disease. The general health gradually improves. The affected limb resumes its normal size. The wounds gradually close, but one or several fistulous tracts persist, discharging more or less pus. These fistulae lead to the dead bone or sequestrum. If the sequestrum is of small size it may be discharged and the sinus closes, but this very rarely occurs. In the majority of cases a secondary operation,

sequestrotomy, becomes necessary. The object of this is the removal of the necrosed bone, and should be done under strict antiseptic precautions. The part should be rendered bloodless by the Esmarch-bandage. An incision made down to the bone the periosteum reflected, and enough of the involucrum removed with the chisel to give free access to the sequestrum and enable its removal. The cavity is thoroughly curreted, washed out with some antiseptic solution and packed with iodoform gauze. An antiseptic dressing should then be applied and the limb put in a splint. The process of healing in these cases is generally slow, and many different methods have been suggested to secure a more speedy convalescence. Neuber suggested the fastening of skin laps to the floor of the cavity; Bier, osteoplastic resection of the involucrum, and Senn used decalcified bone-chips to fill up the cavity. I have used the Neuber method in one case with very good result, with the others I have had no practical experience and so cannot speak as to their utility

In conclusion I wish to briefly relate the history of a typical case of the disease, to show you the sequestrum removed, and give a short outline of its treatment.

On September 25, 1904, I saw J. B., a boy 10 years of age. He had not been feeling well for several days and complained of pain in his left leg. His parents thought he had a slight attack of rheumatism. There was no history of an injury or exposure to cold, and yet the evening before I was called he had a severe chill and was feverish and restless during the night. On examination I found the leg swollen to about twice its normal size, oedematous, and very tender to the touch, especially so near the knee and ankle-joints. The skin had a mottled appearance and the cutaneous veins were more prominent than usual. The boy looked very sick. His temperature was 104 and his pulse 120 per minute. The tongue was dry and glazed, and he complained of intense pain over the entire left leg.

The diagnosis of acute osteomyelitis was made and operation advised. The operation was performed the next morning, September 26. After the patient was etherized a free incision was made over the lower part of the tibia, a few inches above the

internal malleolus. There was a gush of brown, offensive pus mixed with shreds of necrosed tissue. On inserting the finger in the wound I could feel the bone denuded of its periosteum. The abcess cavity seemed to extend upward, so a second incision was made over the upper part of the tibia. I was then enabled to examine the extent of the disease. The entire shaft of the tibia was denuded of its periosteum and the pus had burrowd upwards and backward to the popliteal space. The cavity was irrigated with bichloride solution and gauze drains inserted. On the lower part of the tibia the medullary canal was opened.

An antiseptic dressing was then applied and the limb put in a splint. The dressing was changed daily for about two weeks, and during this period I opened about six abcesses on different parts of the leg before I could get control of the suppuration. At the end of two weeks the patient was doing well. The temperature became normal. The swelling of the leg diminished. At the end of a month the wound had healed, but three fistulous tracts remained, one below the knee-joint, one near the middle of the tibia and the third above the external malleolus. There was a slight discharge of pus from them and several times small pieces of bone came away. As the patient's general health was good I advised to wait with the secondary operation until the newly-formed bone was strong enough to take the place of the old bone. It is always well to do this unless the condition of the patient contra-indicates delay. The second operation (sequestrotomy) was performed on January 28, 1905. One incision was made over the tibia, extending from just below the knee to the internal malleolus. After reflecting the periosteum and chiseling away a part of the newly-formed bone, I was enabled to remove the sequestrum I have shown to you. This sequestrum consists practically of the entire shaft of the tibia. Abcesses had also formed in both epiphyses. The abcess-cavities were thoroughly curreted and washed out with bichloride solution. The edges of the wound brought together with silk-worm gut sutures, openings being left above and below for drainage and for packing the cavities in the epiphyses.

ADDRESS OF WM. L. RAEDER, ESQ.,

ON THE PRESENTATION OF THE PORTRAIT OF THE LATE DR. HARRY HAKES.
FEBRUARY 15, 1905.

Mr. Chairman and Gentlemen of the Luzerne County Medical Society:

I have listened with much satisfaction and profit to your discussions. I believe that the confidence of the world is closer to your profession than it is to the church or the law. Your province is the restoration of the afflicted in body and mind—without health all is void; the church appeals to the spiritual conditions—too frequently case-hardened—while the law seeks to enforce equitable conditions—often a misnomer.

The physician enters into the home, inspiring greater faith than either the pastor or the lawyer; each has, however, his significance. The old family doctor is looked upon with veneration and faith from the head of the family down to the little babe as an every day incident; the minister only now and then, and the lawyer within hailing distance.

The world generally greets the physician with confidence and love, the minister with respect and awe, and the lawyer with coldness and suspicion. The tree, however, is known by its fruit, it matters not in what garden it may grow. The milestones of medical practice are at every gate-post in the journey of life from the cradle to the grave. Medical science has stamped upon the sands of life indelible foot-prints. Longfellow has justly said:

"Lives of great men all remind us
  We can make our lives sublime,
And departing leave behind us
  Foot-prints on the sands of time.

Foot-prints that perhaps another
  Sailing o'er life's solemn main,
A forlorn and ship-wrecked brother
  Seeing, may take heart again."

How beautiful the sentiment! How apt the suggestion! About one year ago there passed out from among you, one whose every heart-throb beat in unison with you and your Society. One, who while not a great man as measured by some standards, was certainly a great man, as measured by others; one, who throughout a long and varied life, left foot-prints upon the sands of ripe scholarship, professional attainments and good-fellowship that have given heart again to many a forlorn and ship-wrecked brother; one who ministered to the afflicted in a time when it tried men's souls; one who, while later in life, conquered the intricacies of another profession, still kept the old love always to the foreground. One, who never allowed the milk of human kindness within him to go dry, and whose spring of life was always blended with perpetual youth.

Gentlemen, I refer to the late Dr. Harry Hakes. "I knew him well," so did you, even to the humblest. Plain, forceful, sincere and unostentatious. A firm friend, a considerate enemy, a jovial companion, a child of nature, a physician by instinct, and an upright citizen.

In behalf of his widow and his estate, of which he made me executor, I desire to present to your Society this portrait of him. May it find favor among you, and always remind you of the days of "Auld Lang Syne." May you write his faults upon the sands and his virtues upon the tablets of love and memory.

"A STUDY OF DIPHTHERIA ANTITOXIN."

BY DR. W. G. WEAVER, WILKES-BARRE, PA.

READ MARCH 1, 1905.

I have been requested to prepare a short paper on this subject, but it seems to me that it is so well understood, both by the profession and the laity, that very little remains to be said. To attempt to eulogize antitoxin would be like gilding pure gold, or painting the lily.

In discussing a paper on diphtheria, read by Dr. R. P. Taylor before this Society in February, 1895, I expressed some skepticism concerning the serum treatment of this disease, but in June, 1896, in discussing a paper on the same subject, read by Dr. Foss before the Society, I gave the heartiest endorsement of the treatment of diphtheria by antitoxin, and concluded by saying: "I am convinced that where antitoxin is used sufficiently early in the treatment of diphtheria the death rate will be reduced so low as to rob this hitherto very fatal malady of nearly all its horrors." And this is my opinion today, after an experience of nine years with the serum treatment. Within this period I have only one fatal case to report, and this was a case where a physician had preceded me, who had not used antitoxin. Thus valuable time had been lost.

Some might be inclined to criticize me for my change of position in 1896 and since, from that of 1895. I would say, with Emerson, only small minds make consistency a virtue. He who cannot change his position from time to time to keep step with the onward march of science, has no right to remain in the medical profession. And he who cannot see that antitoxin is the greatest discovery of the age—the greatest boon to mankind—the greatest legacy which medicine has contributed to the human race—must indeed belong to the class spoken of by the Great Physician, "Who, having eyes, see not, and having ears, hear not."

Before taking up statistics showing the great decrease in the death rate from diphtheria since the treatment by antitoxin was inaugurated, let me answer one question which occa-

sionally is raised by the laity. Has antitoxin any injurious effect on the system? Has it a tendency to weaken the heart? I answer emphatically, no. In an experience of nine years with this serum I can recall only one case of noticeable paralysis of the palate, and only one case (now under treatment) of paralysis of the recti muscles with strabismus and double vision. I have seen no case of paralysis of the heart. How was it before the days of antitoxin? How frequently did we find paralysis of the palate? The paralysis sometimes affected the muscles of deglutition, and in some cases the patient was unable to swallow at all. In one case I was compelled to feed the patient through a tube for about four weeks. In some instances death occurred from sudden paralysis of the heart after the patient was supposed to have recovered. Every form of paralysis can be recalled. I have never seen the slightest evidence of weakness from the use of antitoxin, however large the dose. The fallacy that antitoxin has any weakening or deleterious effect upon the system should be exposed on every possible occasion, and with all the energy at our command. Fortunately the public so well understand the life-saving character of antitoxin that they stand ready to censure him who fails to use it rather than him who uses it, and fails to save his patient.

Let us now compare statistics before and since the use of antitoxin in the treatment of diphtheria.

Richardier* reports a series of 1778 cases of diphtheria cared for at the Hospital Trousseau, the diagnosis having been confirmed in every case by bacteriologic examination. Treatment consisted in injections of Roux's serum (10 cc. up to 1 year; 20 cc. above two years). The gross mortality was 15.7%. Excluding moribund cases (dying within 24 hours after admission to the hospital), the mortality was only 11.5%. In 1115 nonoperative cases the death rate was 5.5%. On the other hand, the mortality of the laryngeal cases requiring operation was 27%. Baginsky ("Nothnagel's system") reports 1500 cases in hospital and private practice, and says that the

* Year Book of Medicine and Surgery, 1902.

fall of mortality under serum treatment has been from 41% to 8% or 9%. Cases injected on the first day give a death rate of from 1.07% to 2.7%. Cases injected upon the second day give a mortality of from 5.7% to 14.1%. Shurley reports a second series of 100 operative cases treated with antitoxin and intubation. Of the first series, 69 patients recovered and 31 died. Of the second series, 80 recovered and 20 died.

When we consider that the death-rate from diphtheritic croup before the days of antitoxin was easily 90% the life-saving from the serum treatment is here graphically illustrated. Every physician can, in his own experience, corroborate these statistics.

Brunon,* from a collective study of the cases of diphtheria admitted to the Rouen General Hospital from 1882 to 1901, finds that the mortality and frequency of this disease increased steadily from 1882 up to 1895, in which year the disease reached its height, and 400 cases were treated. In ordinary years 50 to 100 cases were treated. In 1895 the serum treatment became general. Previous to this the recoveries varied from 34% to 58%. Since 1895 the recoveries were from 74% to 87%, making the average before 1895 46%, and since 1895 80.57%. Large doses of serum were used, and hot baths were given as adjuvants; intubation has largely supplanted tracheotomy.

Jaeger shows that the diphtheria mortality at the Mulhausen Burgerspital has fallen from an average of over 50% in 1892, 1893, and 1894, to an average of 20% and less in the years 1897, 1898, 1899, and 1900. The mortality of laryngeal diphtheria fell from 65% to 68% to 21% to 25%; in the cases operated on the mortality diminished one-half, and there were many more cures without operation. In 1899 and 1900 diphtheria was prevalent and severe, so that the falling off in the mortality cannot be ascribed to a milder form of infection.

M. Howard Fussell is convinced that there has been no change in the type of diphtheria in his experience of 18 years. Since he has been using antitoxin, he has had one death, which

* Year Book of Medicine and Surgery, 1904.

occurred 8 hours after his first visit. He invariably makes cultures, so that no mistake in diagnosis has increased his percentage of recovery. He injects antitoxin at once, and repeats at 6 to 12-hour intervals if necessary.

Dr. B. Franklin Royer|| of the Municipal Hospital, by statistics of the Boards of Health of Chicago, New York City, Brooklyn and Philadelphia, proved an actual decrease in the loss of life in each city respectively at 5,400, 8,204, 951, and 1,853, a total of these four cities, without allowing for increased population, of 16,408 lives. By a table including 67,748 patients treated in the Metropolitan Asylums Board Hospital, a decrease in the death rate of 15.24% was shown. By a table from the South Department in Boston, reporting 16,544 cases, a decrease of 29.26% was shown. In the Municipal Hosital, reporting 10,219 cases, there was a decrease of 10%.

No better proof of the potency of antitoxin can be desired than the statistics of our own city. Beginning with 1895, before antitoxin had been used to any extent, we find there were 299 cases reported with 88 deaths, or a death-rate of 30%. Below I give a table from 1895 to 1904 including both years.

YEAR.	CASES.	DEATHS.	PERCENTAGE.	
1895	299	88	30	Before antitoxin.
1896	266	36	13½	Antitoxin in use.
1897	169	26	15½	" " "
1898	160	16	10	" " "
1899	166	8	5	" " "
1900	140	19	13	" " "
1901	86	15	17½	" " "
1902	162	17	10½	" " "
1903	182	13	7	" " "
1904	316	26	8	" " "

The above table shows an average death-rate of 11% for the years 1896-1904, a decrease of 19% as compared with the year 1895. Compared with earlier tables there would be shown a much greater decrease as antitoxin was used to some extent in 1895, though rarely. I do not have access to earlier tables.

|| Journal American Medical Association, February 18, 1905.

From personal experience, and from the reports received from other physicians, I am convinced that if antitoxin were used by every physician and at an early enough stage, the death-rate from diphtheria could be reduced to below 3%.

In considering statistics we should remember that many cases in which antitoxin is used are not reported, as under this treatment the disease is cured in one or two days, and owing to the importunities of parents, these cases are often unreported. If all cases were reported the death-rate would be much lower than the official records show.

My conclusions are as follows:

1. Death from diphtheria is very rare where antitoxin is used in sufficient dose on the first day of the disease. The death-rate ought not to exceed 1%.

2. Where antitoxin is properly used on the second day the death-rate ought not to exceed 3 to 5%.

3. The use of antitoxin reduces the cost of treatment to a minimum, thus proving a God-send to the poor. Usually one or two visits from the physician and the cost of the antitoxin is the entire expense involved in the treatment. When this is contrasted with the weeks of treatment and nursing required before antitoxin was in use, there is every reason for the poor and those in moderate circumstances to venerate the name of Behring—indeed to rise and call him blessed.

4. Where diphtheria exists in a family all the children not already attacked with the disease should receive immunizing doses of 500 units each. I have never seen an immunized child contract the disease, and this is the concurrent testimony of those who have practiced immunization.

5. In cases of doubt the antitoxin treatment should be resorted to at once, and the bacteriological test afterwards made. As is well known, the serum treatment does not interfere with the bacteriological test, as antitoxin does not destroy the germ, but only neutralizes the toxin of diphtheria.

6. This city should have a bacteriological laboratory, with a competent person in charge, to which specimens from every

case of supposed diphtheria should be sent, for report from the bacteriologist.

7. Free antitoxin should be supplied by the city to all persons too poor to purchase it. This suggestion is not made alone from the standpoint of charity, but from an economic view of the question. If it be said that the bestowal of charity is not a proper function of the municipal government, surely the preservation of the health and lives of her citizens is an exercise of wisdom as well as the discharge of duty.

DISCUSSION.

DR. FELL.—I believe the majority of physicians did not use antitoxin in 1896, and that year I had diphtheria and took antitoxin; it saved my life.

DR. WEAVER.—I think that if all the cases were reported the results of antitoxin treatment would be found more satisfactory. Many cases are not reported that get well in two or three days after the antitoxin.

DR. FAULDS.—I have used antitoxin for the last nine years, and during that time have had only four deaths. I have always immunized when possible. I have never seen diphtheria in an immunized child. I have never seen any bad effects from the use of antitoxin and I have given as much as 11,500 units. This was illustrated in an epidemic in Luzerne. I had forty cases without a death, while there were twenty-six cases with thirteen deaths reported by other doctors, who had not used antitoxin.

TWO PHASES OF ANTHRACITE MINE HYGIENE.

BY JONATHAN M. WAINWRIGHT, M. D., SCRANTON, PA.
(Written in collaboration with Dr. H. T. Nichols, Scranton, Pa.)

READ MARCH 1, 1905.

I fear that I am asking your attention to a very dry and uninteresting subject. My only excuse is its importance. In fact the whole question of the diseases of occupations is practically an untried field in this country. To take the coal mining industry where several hundred thousand men and boys are employed, the question of what the harmful effects on the health are and how, if at all, they can be prevented, becomes a very important one both medically and economically. There are only two phases of this subject which I wish to consider tonight. The first is hook-worm disease, which has become so important in foreign coal fields, and the second is pulmonary tuberculosis in its relation to mining.

I. HOOK-WORM DISEASE.

I shall speak very briefly on this subject, as the most of our work on this subject has already been published by Dr. Nichols and myself in the *Medical News* for April 23, 1904. About two years ago this Society had the privilege of listening to a very interesting address by Dr. Stiles, on the hook-worm, so that any general discussion of this subject is unnecessary. Dr. Stiles, however, did not go into the importance of this disease to miners. As you know, the first general outbreak of hook-worm disease was discovered in the St. Gothard tunnel, about 1880. From this tunnel it was carried by returning peasants all over Italy, and to the Hungarian coal mines. It is said now that 90% of the Hungarian miners are infected. From Hungary it spread to Germany, where, in Westphalia, about 25,000 miners are said to have it. At a recent German labor meeting it was said that the duration of life among miners has been reduced by about five years by hook-worm disease within the last decade. The disease is widely prevalent in Belgium, and to a less extent in France. In England it has

so far been found in only one mine, a tin mine in Cornwall, but here it is believed to affect practically all the miners.

In our previous note we recorded the fact that in the stools of 400 miners from all over this valley we found the hook-worm *ova* only once. This note is simply to say that since we have have examined 162 more miners without finding the hook-worm again. I would like again to call attention to the fact that the disease should be kept in mind in the treatment of anaemias or obscure conditions marked by weakness in miners. It is practically certain that the disease is every once in a while brought into our mines and its spread should always be guarded against.

II. ON THE RELATION BETWEEN PULMONARY TUBERCULOSIS AND ANTHRACOSIS.

We all have heard that miners have a tendency to immunity from tuberculosis, that coal dust prevents tuberculosis, and that it even has a curative effect when tuberculosis is once developed. The present article is an inquiry as to whether these ideas have any basis in fact, and if so, what is the cause.

An investigation into the relationship between any disease and an occupation or mode of life is always complex. This complexity becomes more marked when the disease in question is as intricately connected with social, sanitary, economic, racial, and other factors as is pulmonary tuberculosis. It is doubly so when the human factor to be considered is as varied as to race, habits of living, diet, intelligence, etc., as are our anthracite mine workers.

Some general aspects of the question will, to an extent, account for a part of the presumed low mortality from tuberculosis among miners. We know now, for instance, that tuberculosis is essentially a disease of those living under crowded conditions both at home and at their work. Crowding at work is never present among mine-workers. Seldom are there more than two or three, and often only one man working in a large chamber. Furthermore, the spread of infection among the men at work is practically impossible as the moisture in the mine prevents the sputum deposited from drying. The germs

must either die out from lack of nutriment or be washed away by the mine waters.

Conditions above ground also favor a low tubercular death rate among miners. While in the mining region a far too large number of foreigners will often occupy a small house, there is none of the vast overcrowding of the city tenements. A very large number of miners, at least, as compared to many other trades, live with only their own families in single or double houses. Even the houses overcrowded by foreigners are separate, so that the number exposed to infection from a consumptive boarder is comparatively small.

The habits of mine-workers as compared to many other working people also tend in a measure to freedom from tuberculosis. For instance, the mine-worker frequently has to walk several miles to the shaft through the fine air of high altitudes. There is comparatively little traveling to and from work in a sputum-soaked street car. Furthermore, a miner's house being generally on a small lot, his time out of the mines is much more frequently spent out of doors than is the case with flat-dwellers. Often some of the time is spent working in a small garden. The fact that a daily full bath is imperative also must have a marked influence on the health of miners.

It is of course a fact that for every trade a large proportion of its tuberculosis mortality belongs really to the saloon. The alcohol factor among miners probably does not differ much from that of other workers of the same social grade. These general factors can not account for all the difference in mortality from tuberculosis among miners that really seems to exist. It is probable that there are other factors among which the anthracosis seems to be important.

Before going further it will be well to consider the evidence that there really is this supposed low mortality among miners.

One naturally turns first to statistics. In considering the statistics of a disease like tuberculosis in relation to any occupation, it has well been pointed out by Miss Brandt (1) that there are two important factors to be considered as having an influence. One is whether there is for a given occupation a sort of natural selection at work by which only the stronger

youths take up the occupation so that from the start we have a more or less picked class in whom tuberculosis would naturally be rare.

Second. Is it a fact that miners who have contracted tuberculosis seek lighter work and finally on death are registered with this second occupation to which they really do not belong, thereby artificially reduce in the true death rate among miners and swelling it in another easier trade?

In regard to the first question it does not seem that any one who is at all familiar with coal-mining people will think that the process of natural selection works in any way to make them a picked class. Boys and men take up mining not because they are particularly strong, but because it is the easiest work to obtain in the region in which they live, and it becomes in a way their natural destiny.

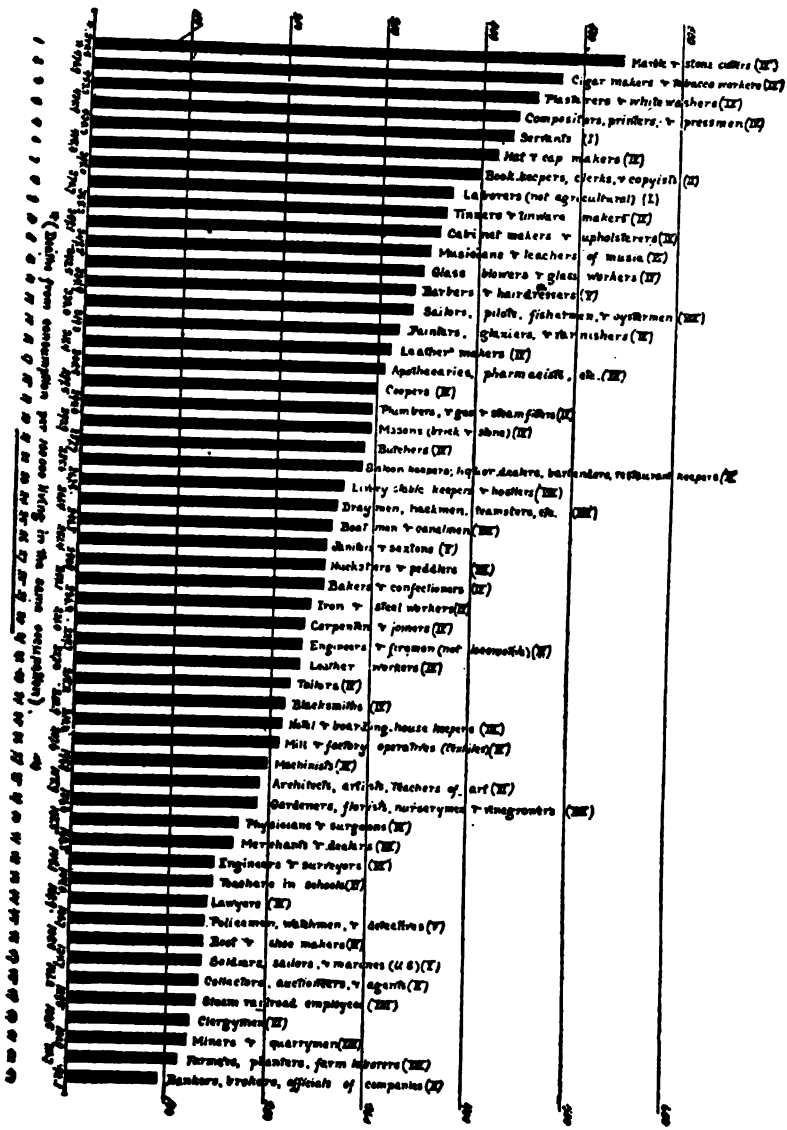
As to whether weaklings even when admitted to the mining occupations are not weeded out later, it may be said that mining is not such a laborious trade as has been suggested as to have this effect. It is certainly not more laborious than that of the farm-laborer with whom they are nearly equal in point of tuberculosis mortality. It is certainly not more laborious than that of blacksmithing, where the mortality is about twice as high.

In regard to the second point,—whether consumptive miners do not drift into another trade, it seems that here, too, there is not an appreciable factor. Most consumptives continue at their ocupation so long that when they do have to give up they do not have enough strength and ambition left to start a new trade. At death they are registered in the trade which they first followed or among the "unemployed." That the "unemployed" contain many who contracted tuberculosis while in active work is unquestioned, but this factor should about balance in all trades.

We think that Schaffer (2) of Pottsville, Pa., would have agreed with us that these two factors do not operate in the cases of coal miners. He says of the boy starting to work in the breaker that "he grows up to be a lusty, sinewy youth, who seldom troubles doctors except from accident." Schaffer

quotes Roy, a mine inspector in Ohio, as follows: "With currents sufficient to carry off noxious gases, smoke, and at least most of the dust, mining becomes not merely a healthful but a pleasant occupation notwithstanding what has been said about its drawbacks * * * men who go from the farm and shops to work for a season in the mines rarely go back to their old work."

The largest collection of statistics bearing on this matter is probably that of the United States census for 1900. In classifying deaths according to occupations it is unfortunate that the census bureau groups all miners and quarrymen together. On this account it is impossible to get for the whole United States accurate figures concerning coal miners alone. However, it is to be remembered that all authorities consider colliers the healthiest class of miners, and all agree that stone dust is much more injurious than coal dust. It is therefore unquestionably true that the figures for coal miners alone would be more favorable than those for all miners and quarrymen combined. The following comparison of this class then must be read with the knowledge that the comparison for coal miners alone would be more favorable still. In the census classification from the registration area of 53 occupations for the census year 1900, miners and quarrymen occupy the second place from the bottom in point of view of tuberculosis mortality. The two classes who have a lower mortality rate are (1) farmers, planters, and farm-laborers, and (2) bankers, brokers, and officials of companies. The rate of death for miners and quarrymen per 100,000 living in the occupation is 120.9. Comparing this with a few of the presumably more healthy occupations we see the rate for lawyers is 139.9, for physicians and surgeons 168.8, for carpenters and joiners 231, for draymen, hackmen, and teamsters 261.4, for sailors, pilots, and fishermen 333, etc. The highest in the list are marble and stone-cutters at 540.5. The rate for "out-door laborers," in which miners are grouped, is 147. These statistics are graphically shown in the accompanying diagram, reproduced from the "Hand-book on the Prevention of Consumption," through the courtesy of Miss Lillian Brandt.


Marble & stone cutters (IV)
Cigar makers & tobacco workers (IV)
Plasterers & whitewashers (IV)
Compositors, printers, & pressmen (IV)
Servants (I)
Hat & cap makers (IV)
Book keepers, clerks, & copyists (II)
Laborers (not agricultural) (I)
Tinners & tinware makers (IV)
Cabinet makers & upholsterers (IV)
Musicians & teachers of music (IV)
Glass blowers & glass workers (IV)
Barbers & hairdressers (V)
Sailors, pilots, fishermen, & oystermen (III)
Painters, glaziers, & varnishers (IV)
Leather makers (IV)
Apothecaries, pharmacists, etc. (III)
Coopers (IV)
Plumbers, & gas & steamfitters (IV)
Masons (brick & stone) (IV)
Butchers (IV)
Saloon keepers; liquor dealers, bartenders, restaurant keepers (IV)
Livery stable keepers & hostlers (III)
Draymen, hackmen, teamsters, etc. (III)
Boatmen & canalmen (III)
Janitors & sextons (V)
Huckstors & peddlers (III)
Bakers & confectioners (IV)
Iron & steel workers (IV)
Carpenters & joiners (IV)
Engineers & firemen (not locomotive) (IV)
Leather workers (IV)
Tailors (IV)
Blacksmiths (IV)
Hotel & boarding-house keepers (III)
Mill & factory operatives (textiles) (IV)
Machinists (IV)
Architects, artists, teachers of art (IV)
Gardeners, florists, nurserymen & vinegrowers (III)
Physicians & surgeons (IV)
Merchants & dealers (III)
Engineers & surveyors (IV)
Teachers in schools (IV)
Lawyers (IV)
Policemen, watchmen, & detectives (V)
Boot & shoe makers (IV)
Soldiers, sailors, & marines (U S) (V)
Collectors, auctioneers, & agents (V)
Steam railroad employees (III)
Clergymen (IV)
Miners & quarrymen (III)
Farmers, planters, farm laborers (III)
Bankers, brokers, officials of companies (V)

According to the same census report consumption caused 10.6% of all deaths among miners and quarrymen, as against 16.2% for all occupied males, and as against 10.2% for the "out-door group" among which miners are included.

In the whole United States consumption caused 9.6% of all deaths amongst miners and quarrymen as against 14.5% for all occupied males and as against 11.2% for the "out-door group" of workers. (The figures for miners and quarrymen are based on a return of 5895 total deaths from all causes.) According to this table, therefore, consumption is nearly one-third less frequent among miners and quarrymen than among other occupied males. As noted above the rate for miners alone would be still less.

In England statistics point equally strong to a diminished mortality from tuberculosis among miners. Tatham (3) presents a very succinct statement of the case based on figures from the Registrar General's office for 1890 to 1892. These English statistics show that the relative figure for deaths from phthisis among coal miners is only 97 as against 109 for all classes of miners (iron, copper, tin, lead, etc.), and as against 115 for farm-laborers and 185 for all occupied males.

Parry (4) from English figures on more or less dusty occupations gives the following table of relative mortality in which coal miners stand lowest, not only in regard to consumption, but also in regard to all other diseases of the lungs. In both respects they stand lower than all occupied males.

Table I. Parry. (England.)

Occupations.	RELATIVE MORTALITY FIGURES. Consumption.	Other diseases of lungs.	Total lung diseases.
Coal miners	126	202	328
Carpenters and joiners	204	133	337
Plumbers, painters and glaziers	246	185	431
Masons, builders and bricklayers	252	201	463
Wool manufacturers	257	205	462
Cotton manufacturers	272	271	543
Quarrymen, stone and slate-workers	308	274	582
Cutlers	371	389	760
File-makers	433	350	783
Earthenware	473	645	1118
Cornish (tin) miners	690	485	1148
All males (England and Wales)	220	182	402

(Sweeps, coal heavers, and trimmers give higher figures than coal miners.)

We have not been able to find any large collection of French or German statistics.

In order to get some first-hand information in regard to our own anthracite mine-workers as a class we have gone over the death certificates on file at the Scranton Bureau of Health for ten years, and have worked out the percentage of deaths from various causes and the average length of life, etc., among miners as compared with other occupied males. The years covered were the last ten excluding 1902, the year of the long strike of over five months. A short strike of a little over a month in 1900 was ignored. With a general population of something over 100,000 Scranton has had during the above period 857 deaths among miners and 2656 deaths among other occupied males. In each case the actual certificate of the physician furnished the data and only complete certificates were used.

Aside from the ever-present possibility of mistaken diagnosis there are two special circumstances which make our results suggestive rather than mathematically absolute. In the first place many certificates were excluded as incomplete and a slight error may have crept in from this. It is fair to assume that this exclusion affects both groups to the same degree. Secondly, the occupation in many certificates is only given as laborer, and it was possible that some mine laborers were so designated. On going over the certificates we came to regard this possibility of error as slight, because mining is such a distinctive occupation that we found special reference made to it or the context showed the exact occupation.

With these qualifications our statistics are as follows:

Table II. Showing percentage of all deaths which are caused by various lung diseases and trauma. (For last ten years at Scranton.):

	Pulmonary Tuberculosis.	Asthma.	Pneumonia.	All lung diseases.	Trauma.
Anthracite mine workers (857 deaths)	3.37%	7.0%	10.96%	23.45%	45.57%
All other occupied males at Scranton (2656 deaths) . .	9.98%	1.58%	13.85%	27.86%	14.15%

Trotter (12) of Beddingtonshire, an English coal field, says: "As a disease phthisis is probably more uncommon among coal miners than among any other class of workers. * * * I am inclined to believe that the comparative rarity of phthisis among coal miners is probably largely due to the protective influence of coal dust or soot." He considers this partly a mechanical action due to the coal dust and soot clinging to and covering the sharp angles of the mineral matter inhaled and "to a lesser degree to an antiseptic and deodorant action." He says that "the death returns from phthisis in a colliery district show a greater proportion of deaths among females than among males." (See Goldman's and our own opinion above.) "Colliery surgeons almost invariably state that phthisis is not so common among miners as in other districts in which they have practiced."

We have been trying to add some experimental evidence to the question of the influence of anthracosis on tuberculosis, and as far as we have gone our experiments have been affirmative. Our method has been to keep guinea pigs about two months in a box in which coal dust is constantly stirred up. In this way quite a degree of anthracosis has been produced. We have then taken these pigs and injected a suspension of a pure culture of tubercle bacilli directly into the trachea which was exposed by dissection. In this way one can be quite sure that the tubercle bacilli actually reach the lungs. Control animals which had not been subjected to the dust were also injected in the same way with the same syringe full of suspension, so that, as far as possible, the same dose was obtained for all. In the first series when the pigs were killed the control had extensive tuberculosis of the lungs and abdominal viscera. The anthracotic pig had extensive tuberculosis of the abdominal viscera, and of the glands around the tracheal injection, but *the lungs were free.* In a second series the result was the same. Two anthracotic pigs were injected and the lungs of both were free. In a third series the two anthracotic pigs had pulmonary tuberculosis and practically the post-mortem finding did not differ from the control

of the series. If, therefore, half of the pigs were protected from pulmonary tuberculosis by the coal dust it creates a strong argument. It is not, of course, to be presumed that every pig would be protected. The animals thus far tested are too few to be completely conclusive, but a great deal of time will be required to get more data. The conclusion of each experimental series takes about four months. Many series have had mishaps and failed, so that many months have been lost. These experiments are being continued.

We have also obtained a similar result by injecting a suspension of coal dust into the testicles of guinea pigs, and later injecting the testicles with a suspension of tubercle bacilli. Pigs who had previously been injected with coal dust lived on an average forty-nine days. The controls lived on an average twenty-five days.

Having gone as far as is now possible in demonstrating that those who have anthracotic lungs are less susceptible to tuberculosis, the cause of this phenomena must be considered.

The most frequently-mentioned theory is that it is due to the germicidal action of the coal dust. We have tested the germicidal action of coal dust by various methods on tubercle and typhoid bacilli, staphylococcus, vibrio, and several unidentified bacteria and have found that the dust has no germicidal action whatever. It is true that if bacteria are mixed with sterile dust and allowed to remain in contact with it in a test tube for several days, and then plated, a slight inhibitory influence will be observed, but even this prolonged close contact will not kill bacteria. There are also several apriori reasons against this germicidal action of the dust.

Dr. Nichols considers that it is possible that the soluble calcium salts which form a large proportion of the ash of coal dust may at least play a part in the protective influence. He is now working on his theory.

Another idea has been that the rarity of tuberculosis among miners is not due to any protective influence, but depends on the fact that the air of mines is comparatively free from bacteria. We have shown by tests that the air in the chambers

is comparatively free from bacteria. The air supplied to chambers passes slowly through damp gangways sometimes a half-mile long. During this passage many bacteria fall to the ground, so that the air when supplied to the chambers has undergone a purification by sedimentation, just as rivers do. Our tests were by the ordinary Petri dish method. The dishes being exposed at the beginning of the intake or air tunnel, and again for the same length of time in various chambers. The following are two characteristic examples of results:

Table V. Showing the purification of air by passage through intake.

	NUMBER OF COLONIES ON DISH IN THREE MINUTES.	
	Diamond Mine.	Dodge Mine.
Beginning of intake	880	390
Average in chambers	54	18
End, or return tunnel	15	

That this bacterial purification of the air in which the miners work together with the fact noted above that tuberculous sputum can not dry, must have some effect in diminishing tuberculosis can not well be doubted.

As we have said, however, it is probably not the sole factor. Our opinion is that the coal dust in the lungs does exert a real protective influence against the tubercle bacilli, and that it is due to the stimulating effect of the coal dust on connective tissue growth. This connective tissue growth is of course the way in which nature overcomes the tubercle bacilli and anything which stimulates it will be a valuable aid in preventing the bacilli from getting a foot-hold or in overcoming them when once established.

That the coal dust causes this stimulation of connective tissue growth is well known. Microscopically, anthracosis may be divided into three stages.

The first is seen in those who have worked in the mines only a few months. In these some of the epithelial cells lining the alveoli can be seen to be swollen and to contain coal dust. Sometimes a few large desquamated cells containing much pigment can be found in the alveoli lying loose with some detritus and free dust particles. Even in the early stage dust

particles can be seen in the walls of the air vesicles and around the bronchi. In this stage there is no thickening.

The second stage occurs in those who have worked in the mines for several years. In these cases the swollen epithelial cells containing dust particles are much more numerous. The alveoli contain more detritus consisting of swollen dust-bearing epithelial cells and free from dust and some leucocytes. The pigment in the walls of the air vesicles is more marked, and it collects particularly in the connective tissue septa between lobules, where it is in such large masses as to be easily seen by the naked eye in microscopic sections. These are especially well seen in the septa that run in from the pleura, and one will frequently see little black triangles with their bases on the pleura, showing where some septum has been completely filled up with dust. With this deposit there goes an increase in the connective tissue of the alveolar septa wherever there is much dust deposit. The interlobular septa thicken as does also the peribronchial connective tissue, as here also the dust tends especiallv to collect. With this stage the bronchial and mediastinal lymph glands are enlarged and perfectly black. The glands in the lesser omentum are also frequently black from dust swallowed in the saliva. This increase of connective tissue is almost never sufficient to give signs of consolidation. With this stage sometimes comes the condition misnamed miner's asthma. This is really a chronic bronchitis and emphysema, both in symptoms and physical signs.

A third interesting picture is seen in those who have formerly been miners for many years, but who have not been in the mines for some years before death. In these the signs of irritated swollen epithelium have subsided. The epithelium is again normal, and neither the cells nor the alveoli contain dust. The deposits of dust in the alveolar walls, the septa, and the peribronchial tissue still remain and the same connective tissue thickening, but the connective tissue is thicker and more "contracted."

This histological picture of epithelial irritation and connective tisue thickening, with constant loss of elasticity of the air

vesicles, easily accounts for the condition inaccurately termed "miners' asthma." This is clinically a chronic bronchitis and emphysema. We had formerly considered that the simple anthracosis could never give rise to physical signs of consolidation. Quite recently, however, we have seen an old miner who had distinct signs of consolidation down to the fourth rib on the right side. There had been no history of acute inflammation nor of tuberculosis. Repeated sputum examinations and the tuberculin test were negative, and we were forced to conclude that the consolidation was due to anthracosis. In some fifteen autopsies on miners we have never seen any diffuse consolidation. Only once have we made out tuberculous scars at the apices, though these can easily be concealed in the blackened lung.

"Miners' phthisis," which is an unfortunate term used in England, is undoubtedly a misnomer, as far as the phthisis goes. Real tuberculous lesions in miners are always due to the tubercle bacillus.

It may be of interest to note in passing, merely as a matter of record, that we have made a number of qualtitative analyses of miners' lungs and those of people who are not anthracotic. By the most careful methods we could employ we found that there was a considerable margin of error. In a rough way we can say that the foreign matter in the lungs of old miners is about 33% of the dried lung. In adults who have not been especially subject to dust it runs from 1% to 3%, or a little over.

The quantitative estimation of the dust in mines may also be of interest. This quantity naturally varies with many conditions. The average of twenty-five different determinations of the dust in mines which we have taken is .0354 grams per cubic meter. The screen-rooms in the breakers were much more dusty, giving an average of .3967 grams per cubic meter.

The only other quantitative determination of the amount of coal dust in mines which we have seen in literature, is that of Hesse, quoted by Dirksen (10) as .0143 grams per cubic meter of air.

A comparison of the quantity of dust in the air in mines with that in other places can be seen in the following table compiled by Dirksen:

Table VI. Amounts of air in various places.

	Observer.	Grams per cu. meter.
City after rain	Tissandier,	0.00025
Iron foundry	Arens,	0.0015 to 0.0280
Iron foundry	Hesse,	0.0717
Saw mill	Arens,	0.0150 to 0.170
Snuff factory	Arens,	0.0160 to 0.0720
Grinding mill	Arens,	0.028
Grinding mill	Hesse,	0.047
Cement factory	Arens,	0.13 to 0.224
Felt slipper factory	Arens,	0.175
Bunker on steam ship	Dirksen,	0.0828 to 2.2897
Coal mine	Hesse,	0.0143
Coal mine (average)	Wainwright and Nichols,	0.0354
Coal breakers (average)	Wainwright and Nichols,	0.396

From this table it will be seen that there are a number of places as dusty as modern coal mines. There are few places dustier than the screen-rooms of breakers.

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DISCUSSION.

DR. FELL.—Tuberculosis is not prevalent among miners; asthma is more so. I have had little experience with miners, as my work is mostly surgery.

DR. MINER.—Dr. Wainwright has proven in the laboratory and clinics that tuberculosis is not frequent among miners. I had one case in a miner. He had been in this country two years and probably had the disease before coming here. Anthrocosis tends to produce fibrous tissue, and this tends to ward off tuberculosis. This paper has been a treat to the members of the Society.

DR. GUTHRIE.—I want to hear from the members who deal with miners, so as to see if the clinical side will carry out the results of the laboratory; men whose practice is among miners.

DR. MATLACK.—I have not thought much about it. I do not remember more than two cases in miners. Asthma is common. There are two cases in the hospital at present in whose sputum no tubercle bacilli have been found.

DR. SHIEVLY.—I have been practicing eight years and during this time I have examined for several societies and have seen no tuberculosis. I have signed only two death certificates for consumption, and think the disease rare among miners.

DR. LAKE.—My experience bears out Dr. Wainwright. I made eight death certificates for tuberculosis in miners' families, but the miners themselves are very healthy.

DR. WEAVER.—My attention was drawn to the subject during the last strike. My experience is limited and there are no statistics. I have seen very little tuberculosis in miners.

DR. FAULDS.—Tuberculosis in miners, it strikes me, is rare. I think this is true of all diseases. Miners are pretty healthy. I recall three cases in miners who had tuberculosis, but they were out of the mine some time before. I am satisfied that tuberculosis is rare among miners.

DR. ROE.—I want to express my appreciation of Dr. Wainwright's paper. I find it rare in miners to have tuberculosis. I had one case of tuberculosis in a miner. This man's sputum was very black. It has occurred to me that the presence of coal dust makes the ground less fertile. This is probably due to some mechanical effect.

DR. FELL.—I would like to hear from the other gentlemen from Scranton.

DR. THOMPSON.—I would ask Dr. Wainwright how he accounts for the occurrence of tuberculosis in the tin miners?

DR. GUTHRIE.—I want to make a confession and I believe it is the confession of all the members of this Society. They have no records of their tuberculosis cases. I have not. If the Society would have forms printed and send them to the members and these be filled out and sent to the committee on medicine, so that we can have clinical evidence of the Society to substantiate Dr. Wainwright's work; if this could be done it would be invaluable.

DR. CORSS.—Miners say the powder smoke keeps away consumption. Stone is sharp and is hard. This accounts for the larger death rate among quarrymen. The same is true of carpenters. The germs fall on the floor and wood in the mine, and this accounts for the number of unaffected wounds in miners.

DR. PREVOST.—It is very hard to follow these cases up. They are foreigners, and you make one or two visits and then they get another doctor. Then most of these cases go back to the old country when they do not get well quickly.

DR. WAINWRIGHT (*closing*).—The mechanical action of the coal dust is the cause of their apparent immunity. It tends to block up the lymphatics. Servants are the most unhealthy class we have to deal with. They have the worst habits, many of them eat little besides tea. About the statistics of Wilkes-Barre, I sent a man down here and he found a beautiful cabinet of drawers, but nothing in them. The increased death rate among the tin miners is probably due to some chemical in the ore. The quartz of the Rand gold mine contains irritating sulphides which increase the liability to tuberculosis.

RHEUMATISM AND QUASI-RHEUMATIC DISEASES.

BY DR. D. H. LAKE, KINGSTON, PA.

READ MARCH 15, 1905.

I have been particularly interested in the subject of rheumatism during the past year, on account of the rather unusual number of cases which came under my care. This is the chief reason for the preparation of this paper, and I crave your indulgence for its short-comings.

It is said of a very learned jurist that while he never created new law, he displayed unusual wisdom in the interpretation and application of existing law.

While the opportunity for doing laboratory work in the furtherance of medical science is afforded to but few physicians who engage in general practice, it is nevertheless a personal duty incumbent upon all of us to acquaint ourselves with the results of authoritative investigations which may conduce to the advancement of our professional attainments.

If we fail to find the source, we can, by diligence, follow intelligently the course of the stream of human knowledge by seeking daily intercourse with the master-spirits of science, and sponge-like, absorb that knowledge which, disseminated in our daily work, will still further equip us in ameliorating the ills of mankind and gradually, but surely uplift the masses so that the practice of preventive medicine will be but the natural outcome of our efforts.

The bold and intrepid explorer blazes a path for others, and unless civilization follows, his efforts are futile in a large measure.

If the question of the causation of rheumatism is not already fully established, science will persevere and continue to ask until it is conclusively settled: "What is the exact cause which produces this community of resulting stricture?"

Formerly the disease was thought to be due to an excess of lactic or uric acid in the system, and many held most tenaciously to this belief, but to-day such chemical conditions are pronounced to be due to bacillary activity—not causative, but re-

sultant. Many authorities have held to the theory of a neural cause, and this idea has its devoted adherents.

The theory of infection is to-day supported by bacteriologists as well as by the great majority of advanced clinicians.

While the distinctive germ causative of rheumatism is not yet determined satisfactorily, it seems "impossible to arrive at a correct understanding of the symptoms and the course of the disease, unless we assume that it is caused by an infectious germ." (Strumpell.)

The disease is self-limited and sometimes epidemic, thus resembling infectious diseases.

Again, in its severer forms it manifests symptoms akin to those noted in infectious diseases, many of which, like scarlet fever and typhoid fever, present joint affections.

Few scarlet fever patients escape the painful joint complications, for frequently, after the eruption becomes general, patients complain of muscular pains and difficulty in moving the fingers, and this is soon followed by swelling of the phalangeal articulations. The wrist joint is often involved, but the larger joints rarely. In some instances these arthritic manifestations occur during convalescence, and then we sometimes find larger joints, especially the knee and shoulder, behaving much like the joint involvement of true articular rheumatism.

Again, in favor of the germ theory we find that most acute diseases presenting fever and constitutional reaction have been proven to be of infectious origin.

The severer manifestations of the disease, together with its so-called complications, such as pleurisy, pneumonia, endo and pericarditis, leucocytosis and anaemia, together with a marked tendency to relapse, suggest those of other maladies such as pyaemia, gonorrhoea, scarlatina, typhoid fever and cerebro-spinal meningitis, which frequently present joint symptoms.

Recently Poynton and Pain of London, have made some researches with striking results. They found a diplococcus which may prove to be the destinctive germ. They isolated it from eight cases of the disease, finding it in the blood, the

pericardial fluid, the vegetations from the valves of the heart and also in the tonsils.

They also demonstrated its presence in the joint exudations of inoculated rabbits. These rabbits showed multiple non-suppurative arthritis, valvular endocarditis, pericarditis and moderate febrile disturbance.

In rheumatism, as in other infectious diseases, we find both streptococci and staphylococci, and it is suggested that the latter appears as the cause of endocarditis. (Strumpell.)

In 1901, F. Meyer, a German investigator, made a series of studies of the mucus from the tonsils of rheumatic patients, and found therein diplococci, whereas in other cases of uncomplicated tonsilitis they were not found.

He maintains that these bacteria possess a peculiar affinity for the serous membranes, and especially for the endocardium, and the suggestion of a close relationship between them and articular rheumatism is advanced.

F. W. Packard of Philadelphia, has declared himself in favor of the view that the disease is due to the presence of toxins, and not of bacteria, stating that the intoxication follows as the result of an infected tonsil.

Personally, I do not hesitate in accepting the statement that "Rheumatism is a disease of infectious origin, characterized by general toxicity, inflammatory involvement of joints and frequently of the muscles and skin with complications involving the heart and serous membranes."

The joint affection is usually a serous synovitis, and even the morbid anatomy of the parts shows no changes which are peculiarly characteristic of this disease. The morbid changes begin in the cartilages, which frequently soften, and at the points of greatest pressure are absorbed or worn away. The exposed articular bone surfaces show a smooth and ivory-like surface. The blood shows more rapid anaemia than in most diseases, this condition being increased by the use of salicylates.

Heredity is an important cause, but of all the predisposing etiological factors, cold seems to be the greatest. One attack predisposes to another. Up to the age of twenty girls seem more prone to this disease than males.

The term rheumatism has been used too carelessly by far, to indicate almost any condition accompanied by pain and tenderness of the joints and muscles, and thus unfortunately to include morbid conditions of widely different nature, as for instance, osteomyelitis. The possible confounding of the latter disease with rheumatism was especially emphasized in the discussion which followed Dr. Trapold's paper of recent date.

Some investigations have been made regarding the relation between acute articular rheumatism and traumatism.

We are conversant with the fact that infected wounds of joints cause pyaemia, but rarely rheumatism. Infected skin wounds produce pyaemia, but only infrequently does rheumatism follow.

"Subcutaneous injuries very rarely cause pyaemia, but they are often followed by rheumatism."

It is not uncommon to find acute rheumatism involving first a joint which has previously been the seat of trauma. It is, however, essential that the attack of rheumatism should follow the traumatism quickly to be considered caustive.

Norwegian observers state that the disease does not develop above a certain altitude. It is, as we know, especially frequent in temperate and humid climates, but is rarely found in tropical and arctic regions.

Although inflammatory rheumatism does occur at any age, it is rarely found in infancy and it is comparatively rare in early childhood. A child three years of age was recently under my care. There is unfortunately a mitral murmur left to emphasize the seriousness of this disease in the young. The manifestations of rheumatism are perhaps more varied in the child than in the adult.

An acute attack rarely proves fatal in an adult, but the prognosis is far from being as favorable in the child.

The disease may be ushered in by an attack of tonsilitis or pharyngitis, or both, followed by indefinite articular pains. Usually the onset is sudden and accompanied or soon followed by a rise in temperature, which in from twenty-four to thirty-six hours reaches about one hundred and two degrees F. when

there is found local heat in one or more joints, associated with tenderness and pain.

The joints most commonly affected are the elbows, wrists, ankles and knees. In severe cases scarcely any joint is free from participation in the painful phenomena, though the vertebral and sterno-clavicular articulations usually escape. The tendinous sheaths of the wrists and ankles are frequently involved, and in severe cases the muscles adjacent become tender and quite rigid.

The elevation of temperature in articular rheumatism corresponds with the joint phenomena and is therefore irregularly remittent. The fever is the primal manifestation, while the joint involvement is secondary.

Of twenty-three cases under my care in sixteen months, the disease commenced with tonsilitis in eight, and in three of the eight cases endocarditis followed, with lasting proof of its occurrence.

The arthritic phenomena are very slight in children as a rule, yet even in the mildest cases the heart may be involved. Several joints may be affected, but the arthritis is usually less severe and more transient than in the adult, while in the former the assault upon the heart is far more disastrous.

The skin is inclined to perspire, but this is not an indication of falling temperature as is seen in other diseases.

The mildest attack in a child calls for a thorough daily examination of the heart and chest, for there may be a commencing rheumatic pleurisy or pneumonia, as well as some cardiac involvement. The external symptoms, as shown in the joints, are not of vital importance, but they are of especial diagnostic import.

In children the swelling of the joints is not as pronounced as in adults. In some few of the cases appearing in the former, we find small, slightly movable, firm nodules under the skin, in number varying greatly from one or two to many. They are not particularly painful, but they are tender and are usually found over prominent bony points of the long bones and over the spinous processes of the vetebral column. They disappear

usually in a few days. Cases presenting these phenomena are usually the victims of important cardiac changes. Indeed, Drs. Barlow and Warner, English observers, suggest that these nodules are a fibrinous exudation similar to the inflammatory exudation which forms the base of the vegetation on the cardiac valves.

The sub-acute variety of this disease to some extent resembles the acute form, though milder, and fewer joints are involved. This is, however, the most protracted form of the affection and frequently assumes the chronic type of rheumatism.

There are grave symptoms referred to by many as complications. First, and especially frequent, is endocarditis. In itself the endocarditis is not necessarily serious, though prone to lead to fatal complications. Pericarditis is less frequently met with, and is of a sero-fibrinous nature, and is usually found in adolescence and middle life. A careful examination is necessary in order to quickly discover this serious condition.

It is indeed fortunate that cerebral symptoms are of comparative rarity, though we do encounter cases with marked elevation of temperature accompanied by delirium. Fortunately these cases are exceptional. Some interesting observations have been made concerning the connection between acute rheumatism and chorea. In early childhood the proportion of cases is not so great, but in later childhood, between ten and sixteen years, it is too large to be ascribed to accidental coincidence, and the close relationship between the two diseases is shown in an emphatic manner by the facts that chorea frequently follows acute rheumatism, and that the latter manifests itself often during an attack of chorea. Then there is that mysterious involvement of the heart, following certain cases of chorea, which seems to emphasize the possible fact of a strong probable relationship. Choreic patients often suffer from endo and pericarditis of the rheumatic type, and cases are cited by Coleman, of the St. Thomas Hospital, in which were found subcutaneous nodules similar to those occurring in acute rheumatism. In fact, we would not be far amiss in considering chorea a nervous manifestation of rheumatism.

For a long time the medical profession considered arthritis deformans and gout as being of the same origin as the true rheumatic affections. It is even now difficult to separate some cases of rheumatoid arthritis from chronic rheumatism of the joints. Its origin is unknown, but there is a marked similarity between the arthritic manifestations and the arthropathies due to disease of the cord as found in cases of locomotor ataxia, for instance, Charcot's joint. It is a chronic and progressive disease, usually appearing between the thirty-fifth and fiftieth years, though there is a form of the trouble which affects children. The general progressive form may be acute or chronic, the former occurring in young women in connection with parturition and lactation, and in older women about the time of the menopause, its symptoms in some respects resembling acute rheumatism. The usual variety is some form of the chronic type in which the joints of the hands become involved, then those of the knees, the joints being the seat of pain and swelling. Slowly the joints become deformed by ligamentous thickening and the coincident formation of bony outgrowths which, after a time, render the articulations immobile. Endocarditis is especially uncommon in cases or arthritis deformans, and the nodules are more persistent than in rheumatism.

Heberden's nodules were first described in 1805, and are knobby enlargements of the proximal ends of the phalanges of the fingers. There is not the same history of fever as is found in rheumatic arthritis, and the attacks of pain alternate with long periods of quiescence. It is supposed to be a disease of neurotic origin and by some it is said that it may have as caustive the same cord lesions which are productive of other non-rheumatic arthropathies.

A most pronounced case of joint involvement has been under my care for sixteen years, in a woman, now 56 years of age. When four years ot age she sustained a fracture of the right femur, and recovery was rapid, but at the age of sixteen years, she experienced pain at the location of the former fracture—a sinus formed, which discharged pus, and the same condition is present to-day. She lived in the country many miles away

from the nearest physician, and not experiencing much inconvenience and scarcely any pain after the establishment of the sinus, the condition was allowed to care for itself, except for the daily dressings necessary to keep the parts clean. At twenty years she was married and raised five children. She never had an attack of inflammatory rheumatism, but at thirty-eight years of age several of the phalangeal articulations became swollen, painful and stiff, the pain, however, not constantly present. The disease has been markedly progressive, so that to-day and for the past eight years, the metacarpo-phalangeal articulations are immobile as are also all of the phalangeal joints. The right knee is enlarged and ankylosed. The menopause appeared at forty-eight years. There is no cardiac involvement, but emaciation is pronounced. Is there a relationship between the old injury and the joint affection? Chronic rheumatism presents permanent changes in the joint which produce deformity. This is likely of bacterial origin.

In acute osteomyelitis, there is a less tendency to a multiple affection of the joints, a greater intensity of the local symptoms and the involvement of the epiphyses or the shaft of the bone instead of the joint. Then, again, as was brought out so forcibly by Dr. Guthrie, in the discussion of Dr. Trapold's excellent paper, we have more pronounced constitutional symptoms in osteomyelitis.

Pyaemia frequently presents some of the joint phenomena of rheumatism, and in its early stages may lead one astray. Later, however, suppuration takes place and joints as well as muscles may be involved. There is greater prostration and less moving about of the joint symptoms; the inflammatory effusion in rheumatism is of the fibro-serous type.

In gonorrhoeal rheumatism, usually but one joint is involved, and that usually the knee, though sometimes other joints are the seat of trouble. We do not have the constitutional symptoms, and we do learn of a history of infection.

A study of location and general symptoms will prevent us from confounding gout with rheumatism. The habits of the gouty are easily learned, so that the cause of an attack is placed

at the door of defective oxidation of proteids with faulty elimination of their waste products.

A torpid liver, inactive kidneys and in general inefficient elimination of waste products have much to do with the acute gouty atacks. One of my patients rebelled when I informed him that his ailment was not rheumatism, but gout. He said, "I do not eat rich food. I eat plain food." When I told him that his drinking proclivities prevented the proper care of his ingested food, he had less to say, and now, following my advice, finds himself in better health, and for six months has not entertained his former frequent visitor.

There are certain occupation pains which are not properly termed rheumatic. I can not dwell upon these. In the *Medical News* for February 18, 1905; Walsh states that "much of the so-called uric acid diathesis with the consequent rheumatic pains is nothing more than neuritis of various kinds, due to over-exertion, pressure on nerve trunks preventing proper nutrition, presence of irritating substances in the blood, such as alcohol, lead, the blood disturbances of diabetes, and to some inherited weakness of special sets of nerves."

The mortality of acute rheumatism is low, the causes being found in its complications so-called, but which really are but a part of the disease and to which reference has been made already.

As to the treatment of acute rheumatism, I do not propose to say much, inasmuch as but little that is new has been suggested in the last decade. Salicylic acid, notwithstanding its low power as a germicide, is our mainstay. It is rather strikingly strange that in this disease, now practically acknowledged as one of bacillary origin, that this drug is found to be almost, if not quite, a specific agent. I would very much like to hear opinions expressed upon this point.

The physician looks for clinical results, and in this drug he is seldom disappointed.

I believe strongly in absolute rest, not only for the involved joints, but on account of its favorable influence upon the heart, daily examination of which is necessary. If any indication of

pericarditis is noticed, an ice-bag should be applied. If it causes distress, its application may be remittent. I can not enter into the full treatment of the heart phenomena. For high temperature, say 104 degrees or above, which we encounter sometimes—I find that a sponge-bath acts favorably. In a typical case of acute articular rheumatism, I commenced with fifteen to twenty grains of sodium salicylate, combined with double the quantity of potassium bicarbonate, giving this every two hours. I give children the same treatment, administering from one-half grain to three-fourths grain of the former to grain, one and one-half to two grains of the latter, for each year of the child's life. Should marked deafness and nausea, and a tendency to delirium follow, then I quickly reduce the dose one-half, and gradually increase the strength as soon as possible, until pain is controlled, when I diminish the strength on account of profuse perspiration, which usually produces marked debility.

The old teaching led us to believe that salicylic acid had a deleterious effect upon the heart, but I have never had occasion to find that this drug has any more bad effect upon the heart in rheumatism, than does anti-diphtheritic serum in a case of diphtheria. The heart's condition is no doubt due to the action of the bacillary infection. When the pain is controlled, I usually administer ten grains of the salicylate with fifteen grains of the potasium salt every four hours, in order to prevent a recurrence of the painful phenomena. A veritable multiplicity of synthetic products have been heralded by drug houses for the treatment of this disease. I have temporized with some of them, in order to permit the stomach to rest after taking large quantities of the salicylates. If pain is excessive, I sometimes administer a small quantity of morphine. Certain local measures are of avail, notably the wrapping of the inflamed joints in cotton, and placing the limb in a position of slight flexion, not, however, to remain a long time in such position.

In some cases, I have applied a ten per cent. ointment of salicylic acid with good results. During the last year I have

used equal parts of betul-oil and olive oil, with especially good results in sub-acute cases and in chronic rheumatism, displaying at times acute manifestations. My suggestions, however, regarding treatment are for the acute articular disease.

During the fever I placed my patient upon a liquid diet, consisting chiefly of milk and bread and milk, occasionally permitting the use of thin soups. I am partial to the use of equal parts of milk and seltzer. During convalescense I avoid the use of saccharine substances, depending largely upon farinaceous articles, not allowing the use of meats for at least ten days after the subsidence of fever. I do not favor the use of alcohol in any form, unless it may be of some temporary use in certain cardiac conditions. After recovery the patient should be taught to avoid exposure to predisposing causes, and if his heart is affected, he should, if possible, be kept under observation for several months.

Children require especial care, for changes in the valves tend to get progressively worse. Rest in bed for two or three weeks after the articular symptoms have disappeared should be enjoined, for while valvular lesions are not always present in primary attacks, yet it has been observed that they are frequently found in patients who come under your notice a few months later. These lesions are likely due to a very slow valvulitis from which the patients cannot recover as soon as they do from the articular symptoms. Full recovery then does not necessarily follow the disappearance of the joint manifestations.

DISCUSSION.

Dr. Guthrie.—I think that one of the most satisfactory diseases to treat is acute rheumatism; sub acute and chronic rheumatism are not so easy. I believe in the germ theory. Austin Flint (the father of the present Austin Flint, Sr.) in Bellevue Medical College, believed it was a self-limited disease. He placed patients on a placebo and found they would get well as quickly as with other treatment. They liked the treatment and would come back to get more medicine. I use salicylates in acute rheumatism, beginning with twenty grains, and agree with the author, that drugs should be pushed in heart cases. I sometimes use bromides to stop the ringing in the

head. In nephritis I believe salicylates have a bad effect. In chronic cases, I do not think much can be done. Proper diet, stopping all alcohol and improving their habits, will do much in these cases.

DR. FAULDS.—I use salicylates in sub-acute and chronic rheumatism. I even tell the patient that little can be done. Salicylates certainly relieve the pain. I have not seen in my practice, an enlargement of the joints, and I do believe that proper diet with plenty of water, will have a good effect on chronic cases.

DR. LAKE.—I thank the Society for its kind attention. I can add nothing more.

DR. GUTHRIE.—I'd like to know what will cure chronic rheumatism?

DR. HARVEY.—There seems to be no one here who thinks he can cure it.

TWO CASES OF ERYTHRO-MELALGIA.

BY DR. CHARLES H. MINER, WILKES-BARRE, PA.

READ MARCH 15, 1905.

I have to report two cases of erythro-melalgia, defined by Dr. Weir Mitchell as, "A chronic disease in which a part or parts—usually one or more extremities—suffers with pain, flushing and local fever, made far worse if the parts hang down." The name signifies a painful red extremity.

Case I. A married woman, age 37, and mother of four children. She had typhoid fever when ten years old, after which she was in fair health until December, 1903, when she had an attack of diphtheria. Two doses of antitoxin were given and she was soon able to return to her household duties. During the next few months she complained of neuralgic pains in her arms and shoulders, but had no paralysis.

In the following June, when tired out with her house-work and nursing two children, she began to complain of stiffness on rising in the morning, in the right foot, which would last for an hour or two. Next she began to complain of pain on

the inside of the foot, with some swelling, a purplish discoloration, heat in the part with a severe burning sensation. At first this was relieved, if the foot was put in a horizontal position, and the use of very hot water. It was first treated as a sprain by bandaging, later rheumatic remedies and applications of iodine were used, all without permanent relief. At this time, on rising in the morning, the foot would be very stiff, swollen and blue, and, while walking or standing, the stiffness would pass away and it would begin to give her intense pain. Later, the pain would keep her awake most of the night. I saw her first, early in August, and found on examination, no relaxation of the arch, but the foot was swollen, especially over the first meta-tarsal bone near its proximal end.

Believing that support might relieve the pain, I applied adhesive strips, which gave immediate relief, but only for a few days at a time. She also took Pil. sumbul comp. Not being able to persuade her to take complete rest, she, on my advice, consulted Dr. James K. Young of Philadelphia, taking with her a skiagraph of the parts. On her return she remained in bed three weeks and followed the treatment advised by Dr. Young. The spray of cold water would always relieve the pain and cause the foot to become very much discolored. At present the patient has occasional twinges of pain after a hard day's work.

Dr. Young wrote me as follows: "I examined your patient's foot very carefully and believe her to be suffering from an obscure vaso-motor disturbance, which is known as erythromelalgia. There is another factor present perhaps in the first meta tarsal bone in which there may be a slight periostitis. From the skiagraph, one would think that she should have a painful condition from nerve pressure, but this does not seem to be present. I should advise you to have her keep her foot in a horizontal position for two weeks, to spray the foot and outer side of the leg with cold water twice a day, or at any time that it becomes painful and apply locally the fluid extract of hamamelis (witch hazel); one part witch hazel to three

parts water, applied on lint over the discolored part. Internally, she had best take Pil. sumbul comp. or some preparation of valerian. A silk anklet would be advisable to wear after two weeks."

Case II. Illustrates the early symptoms only. A girl, aged 27, in domestic service, complained on Thanksgiving day last, of pain on the outside of the right foot. I applied adhesive strips the next day, which gave her relief for a day or two. A week later she complained of more severe pains, swelling and a bluish discoloration of the foot after exercise. I ordered the same treatment as in the first case, and in two weeks she was relieved of all symptoms of the trouble.

Dr. Mitchell first believed the disease to be some form of spinal disorder, but more recently he has inclined to attribute the symptoms to some form of neuritis. The disease is rare and Rost states that there are only about forty instances in the literature. It is most common in males over thirty-five. The feet are much more often affected than the hands. The pain may be of the most atrocious character. It is usually, but not always, relieved by cool weather. In a few cases the affection has been complicated with Reynaud's disease.

That surgeons are now familiar with subcutaneous injuries and lesions of the kidneys—Kuster in his above mentioned publication has collected eighteen cases of traumatic nephritis—we must thank Edlefsen, for in the text-books on internal medicine, in the consideration of albuminuria and nephritis, and also in the larger works of the past year, such as Nothnagel (Senator) Penzold (Leube), Ebstein and Schwalbe, we do not find trauma mentioned as an etiological factor.

Since it seems that in general only severe cases are mentioned, or at least such as offer surgical interest, I beg to be allowed to present briefly a mild case of albuminuria following trauma.

On June 17th, of the past year, a German, 22 years old, who had suffered from childhood from prurigo, on account of which he was staying in the city, fell from a horse which he was trying at the barracks in the suburbs, with a view of purchasing.

The incident, as described by the patient, was as follows: When he found he had lost control of the horse he tried to guide him into the yard of the barracks, thinking to throw himself off sidewise in front of the door, so as not to strike against the door-jam. He fell first upon his hands and then bounded backwards, striking the right lumbar region against a sort of wall. He suffered apparently no other injury excepting that his hands were badly bruised against the gravel. As soon as he had washed, as quickly as he could, he came to me, holding constantly a lump of ice in his hands to cool them (a drive of about three-fourths of an hour).

On his arrival his hands burned severely. (The patient is like all sufferers with prurigo, a pallid, though well-grown man, who, from his previous irritating complaint, had grown very sensitive. He had, however, since living in Egypt, been quite well.) The pain subsided quickly under applications of Burrow's solution, and in about a week the lacerated fingers healed smoothly. Aside from this the patient felt a considerable pain with pressure and tension inwardly in the lower thoracic and abdominal region, which was especially troublesome in the sitting position.

Externally there was neither evidence of wound or sugilla-

tion to be found, at once nor later, but there was an especial pressure pain either from muscles or ribs or elsewhere. The scanty urine passed at the time was moderately yellow, and had a specific gravity of 1042 (it was 1:30 p. m., and a hot summer day), and contained a considerable amount of albumen, as shown by Heller's test. There was a small amount of sugar, as shown by Nylander's test. Since the urine seemed absolutely free from blood, I thought at first I had a case of old nephritis. Upon questioning, the patient denied this and stated on the contrary that careful examination of his urine in Berlin the previous Christmas had shown it entirely normal in specific gravity and reaction, and entirely free from albumen and sugar. The microscopical examination at the same time gave absolutely no red blood-corpuscles, and no abnormal condition, especially no renal epithelium nor tube casts. Upon being questioned as to whether he had used medicine for his prurigo that might have caused albuminuria the patient replied in the negative, but stated that fearing a gonorrhoeal infection he had in the last few days been using capsules of oil of santal and salol. The further test of the precipitate with absolute alcohol showed that it was not the result of a resinous acid but genuine albumen.

I now thought that nothwithstanding the absence of blood, a contusion of the right kidney had occurred and that the pain came from pressure of the retrorenal tissues, and since pain following contusion and laceration is apt to increase, and as I feared an increase in albumen, I advised the patient to remain in bed, discontinue the santal capsules. follow a rigid diet and collect all the urine passed in the next twenty-four hours. There was no heart trouble noticeable.

The next day the patient was much better of the pain in his hands. The pulse was 60 and good. The urine was still scanty, and on the previous evening none was passed. The patient stated that ordinarily unless he drank considerably, especially beer, he always passed but little urine. The pain in the side, however, was not better, on the contrary it was increasing, and when the patient attempted to rise in the evening he

had to lie down again immediately. The next morning he could rise up only with difficulty and much pain. Pressure pain, however, was not present, the liver was not enlarged, breathing was alike on both sides, only on deep inspiration and coughing, pain was present on the right side. The quantity of urine for 24 hours remained scanty, about 675 c. c. m., specific gravity 1026½, contained now no trace of albumen, but a small amount of sugar, according to Dr. Kupper. The microscope revealed nothing abnormal.

The patient remained some days in bed and the pain under Preissnitz soon yielded.

On June 26th the patient brought his urine, about 350 c. m., which had specific gravity 1016, was free from albumen but gave a trace of sugar by Fehling's and Nylander's tests, notwithstanding the patient paid no attention to diet in this respect. He experienced pain in his side only occasionally. In order to determine definitely whether the urine passed June 16, was due to the capsules of santal, on account of especial susceptibility of the patient, I ordered him to resume its use in similar manner as before and to report again. On July 18, he came again. The urine at the visit was again scanty and of high specific gravity, 1045; on the same evening another specimen was 1028½, and at the following twenty-four hours after free beer drinking, he passed 1600 c. c. m. of specific gravity 1008½. In none of the three specimens was there a trace of albumen, and Nylander and Fehling tests gave no trace of sugar.

Accordingly, I believe I may state:

1. That after four weeks there was no trace of glycosuria.

2. That the albuminuria found on June 16, without any accompanying appearance of blood in the urine, was occasioned by the fall of the patient from the horse, striking his lumbar region against the wall and causing contusion of the kidney.

3. That the pain in the region of the kidney was caused by contusion and eventually with hemorrhage of the surrounding tissues (according to Edlefsen). That the patient did not previously have albumen as shown by the examination at Christmas, and his improved condition here at the time of his

accident, as well as the sudden disappearance of the albumen, all argue against interstitial nephritis.

Concerning glycosuria, it is well known that it is often of traumatic origin, and if in this case we try to find a connection between the trauma and prurigo, it is well known also that assimilation in prurigo is interrupted, but the fact that the glycosuria disappeared slowly does not argue against its traumatic origin, notwithstanding the patient did not complain of it in the beginning.

The results which the accident produced for my patient were dissimilar from those of Edlefsen's, and setting aside the fact that the patient kept his bed a few days and had pain in his side there were no other remarkable effects.

I have considered it worth while to report this case, because it shows without doubt the possibility that following such a trauma without the slightest sign of blood in the urine, a considerable amount of transitory albumen may appear and also sugar by which, notwithstanding the apparent lightness of the case, it is not readily to be decided whether it will pass away quickly and the patient recover, or whether, as in Edlefsen's case, he must put aside his work and his ordinary manner of life, beer drinking, etc.

Since we see that the surgeons have accepted the idea of traumatic nephritis, it behooves practitioners of medicine also to accept trauma as an etiological factor in producing nephritis and albumen. Taking Edlefsen's case, which has been here mentioned, together with the observations of many concerning the occasional appearance of albumen following injuries in examination, we must conclude that the kidneys, under certain conditions, are at least quite sensitive to contusion, concussion, and pressure. It has frequently been observed in chronic nephritis that moderate concussion, such as horseback riding, frequently causes an increase in albumen. We may certainly suppose, therefore, that according to the severity of the trauma there may occur all the various grades from the light transitory albuminuria up to the hemorrhage nephritis, and from light to very severe albuminuria and inflammation may follow contusion of the kidneys and abdominal covering.

Concerning slighter cases of albuminuria of similar nature, I presume they are not so rare as was formerly supposed. In many cases of slight contusion of the lumbar region and traumata of all kinds resulting in contusion of the abdominal-thoracic region, especially if the patient does not have pain and the urine is not bloody, and he has no other considerable wound, he scarcely goes to a physician at all. And if he should, the latter seldom examines the urine because his mind is directed to other points and there is apparently nothing to call his attention to the albuminuria.

It seems to me without doubt that many cases of more or less transitory nature occasioned by trauma are at first and possibly entirely unnoticed. We know that light cases of albuminuria and nephritis may exist a long time without giving rise to any especial symptoms or without the patient having the remotest idea that he is really sick. How often it happens that in apparently healthy young men, an opportunity of examining the urine being given in life insurance, a considerable amount of albumen is found.

There is another supposition that seems probable. That is, that certain of such cases over whose etiology we puzzle in vain, came originally from some long forgotten trauma.

Without desiring to give trauma undue importance as an etiological factor in transitory and chronic albuminuria, but more especially for clearing the subject and giving it its proper weight, it seems to me that in every case prescribed in which there has been a severe concussion or contusion of the abdominal and lower thoracic regions, or even a severe contraction of the abdominal muscles, we ought to make a most careful test of the urine, both for albumen and sugar, and also a microscopic test, even if there is no wound of the lumbar region or any special complaint of the patient as to pain. Such cases are seen usually not by clinician but by the practical physician, and especially by the company doctor, since such light cases of trauma usually go to him. I suppose further that many of my colleagues have similar observations at their disposal, and I will consider that I am doing a service if I can call forth the publication of such cases.

REPORT OF CASES.

BY DR. S. M. WOLFE, WILKES-BARRE, PA.

READ APRIL 5, 1905.

Mr. President and Gentlemen:

Some time ago the Secretary asked me to read a paper at this time, as the doctor who had been on the regular list for this date, for some reason, was unable to be present. The time was not very long, but I promised to do the best I could. Then, for different reasons, I was prevented from getting to work on my subject for so long that it seemed impossible for me to do it justice, and so, rather than insult the intellegence of this august body with a paper which must necessarily have been hurriedly written, I decided to report to you several cases that have been both interesting and instructive to me, and I hope may be also of interest to you.

The first one I will speak of is Mrs. K., aged thirty. Good family history. Patient has always been rugged and enjoyed the best of health. I attended her in confinement on January 16, 1904, having also attended her in a previous confinement two years before. In both instances the labors were rather tedious, and in both cases were terminated by instrumental delivery, with slight laceration of perineum. Each time the perineum was immediately sutured and a good primary union resulted. In the last instance all went well and the perineal sutures were removed on January 27th, eleven days after confinement, and the patient discharged.

Four days later I was summoned and found the case with a temperature of 105°, pulse 120, and complaining of severe pains in the head, back, and bones generally. There had been no chill. There was still a slight pinkish lochial discharge, but no unpleasant odor. The nurse told me that the day before the patient had gone across the hall to another room where the windows were open, and it seemed that she was suffering from a pretty severe case of grip. Things went on in this way for ten days, the one remarkable feature of the case at this time being the very high temperature. Constant sponging by two

nurses failed to keep the temperature below 105° for more than a few minutes at a time, and the only measure that seemed to answer the purpose at all, was to use about a dozen ice caps about the sides, groins and chest, and even with these the temperature would keep in the neighborhood of 104°. At this stage of the case there were absolutely no symptoms excepting the temperature and a pulse ranging from 120 to 150. On February 10th, the patient had a severe chill, and a right-sided pleurisy developed. A few days later the inflammation had extended into the lung and resulted in a pneumonic consolidation of the lower lobe of same. February 28th, two weeks after the development of pleurisy, I thought I detected fluid in the pleural sac, and upon inserting hypodermic needle, drew out the syringe barrel full of a straw-colored fluid, which showed under microscope, pus corpuscles. The following day I aspirated, but got only one and one-half ounces of fluid. From the discovery of this fluid in pleural sac we had decided evidence of a general systemic infection.

Among the complications after that time, we had a phlebitis of right femoral vein, a left-sided pneumonia, rheumatism of almost every joint in the body, and winding up four months after the onset with multiple abscesses. You will see by the chart that a temperature of 105° and 106°, with a pulse of 140 to 150, was quite the ordinary during a period of ten weeks, while at least twice, the temperature reached the 107 mark, and many times I was unable to count the pulse at all. The question arises as to the original source of the trouble in this case. I had associated with me as consultants, Drs. Guthrie and Fell, both of whom saw the case several times, and I don't think any of us were thoroughly satisfied as to the source of the trouble. We thought of infection, of typhoid fever, of profound malarial poisoning, etc. The case was far from typical of any of these conditions. We could hardly suppose that any infection at the time of confinement would have remained latent for over two weeks and then shown up with such a degree of virulence as you see indicated by the chart. Then, also, during the entire case there was never a single symptom of any pelvic affection, as mentioned earlier in the report.

The first thing that looked to me like septic infection was after the purulent pleurisy on right side. The temperature reached the normal mark about four and a half months after the onset of sickness, and patient has long since made a thorough recovery.

The particular points of interest in this case are the severity of onset of disease, the atypical or rather wanting symptoms, causing doubt as to positive diagnosis, the extremely high temperature and rapid pulse extending over such a long period of time, the many complications arising in the course of the sickness, and the fact that she was able to live through it all.

The next case I wish to speak of is a hospital case, that happened during my service last fall—a middle-aged woman with a general dislocation of practically all of the abdominal organs She had as many symptoms as pathological conditions, and as many diagnoses, by different doctors, as symptoms and conditions combined. She had been treated for everything from cancer of the stomach to hysteria, and when she entered the hospital, she was a morphine habitue, and that, through no fault of her own, as she had taken the drug through a physician's prescription. A diagnosis of dilatation of the stomach was made in the medical wards, and she was referred to the surgical wards for operation. About November 20th I did an abdominal section with the idea of doing a gastroplication. The stomach was found somewhat dilated and occupying a position down in the pelvis. The liver was displaced downward to an extent of six inches, both kidneys were so loose that they could readily be lifted out of the abdominal cavity, and to make up to a little variety, she had a fibroid the size of an egg in the left broad ligament. This was removed, and the stomach and liver were stitched up in their normal positions at this first operation. Three weeks later, I anchored both kidneys, using the Edebohl operation of splitting the capsules.

She has improved very decidedly in her general health, the kidneys seem to remain firm in their normal positions, but the stomach has again sagged downward somewhat, although she has none of her old symptoms, and says she feels well. She

has gained considerable in flesh, and the severe abdominal pain and almost constant vomiting, which she formerly suffered have never returned since the first operation.

The next case, while perhaps not so unusual in nature, still presents a couple of points which are both serious and amusing. A woman who had been a patient of mine for the past ten years, was found about two years ago to be suffering from carcinoma of left breast. She said she had noticed the growth about three months previous to consulting me, but had not paid any particular attention to it. I advised immediate operation, which was promptly declined. Shortly after this I learned that my case was in the hands of another doctor, and was getting well without operation. The next information I had from her, was shortly after Dr. Ahlborn read a paper before this Society on the use of the X-ray and radium in the treatment of malignant growths. A part of the doctor's paper was printed in the *Wilkes-Barre Record* the following morning, and shortly afterward he was consulted by our friends, who requested him to turn on the lights and cure the condition immediately. Dr. Ahlborn examined the case and found a growth the size of a cocoanut, and a general glandular involvement. After carefully considering the matter, he told the people that as his machine was only a 10,000 horse power, and his supply of radium was getting rather low, he would advise them to go back to the old-fashioned method and have the growth cut out. The following morning I was called in. Nearly a year had gone by since I had seen the case, and the condition was certainly bad. A hard, irregular mass, occupying the entire breast, the axillary and subclavian glands enormously enlarged, and a loss of forty-five pounds in weight, were some of the changes that I found had occurred since my visit of a year before. And here is one of the interesting points; when the loss of weight was mentioned, the husband said he thought that was more particularly due to the restricted diet the doctor had insisted upon; that she had not been allowed to eat meat, eggs, oysters, milk or liquors of any description, that the doctor had explained to them that by depriving the system of the nourishment that it

ordinarily got by the natural way, it would find it necessary to obtain nourishment from some other source, and would therefore be obliged to draw upon this new growth for sustenance. I removed the growth on the following day, doing the Hallstead operation, and the most extensive dissection I ever did on a living person, and now, after thirteen months, the case is absolutely free from any signs of recurrence, and has gained in flesh until she is a little above her normal weight.

Gentlemen, if this case remains well, then it is never too late to operate for the removal of a malignant growth, and in my opinion, when it is necessary to remove a cancerous breast at all, then an operation like Hallstead's is little enough to do, removing an area far beyond the disease, sacrificing both pectoral muscles, cleaning out the axilla, and, if necessary, following the blood vessels to the elbow, getting both under and above the clavicle and beneath the scapula.

I recall two cases of my own, and several others that I have seen, that died from recurrent growths of this sort, that I am almost positive might have been saved by the more extensive removal.

In regard to the gentleman who treated this case for a year before the operation, and who proposed to have the system consume it for food, I have nothing but the most profound pity. It is hardly necessary to tell you that he is the same one who does not believe in the use of antitoxin in the treatment of diphtheria, or in anything else that is sane and rational.

In discussing the subject of embolism several years ago, I spoke of a case that died twenty-three days after an operation for the removal of a fibroid uterus. She had entirely recovered from the operation, and was sitting up, getting ready to leave the hospital, when she suddenly threw up her arms and in three minutes' time, was a corpse. I never doubted that her death was due to embolism.

I had a case during the year, who also had an abdominal hysterectomy and a fibroid uterus removed. She got along nicely for a week. I saw her one morning and would have been almost willing to have recommended her for life insurance.

Two hours later I was called in and found a left-sided hemiplegia; twenty-four hours later she died. I speak of this case to compare it with the preceding one. Here was a woman who had lost nearly all the blood she had, before going to the hospital. There was no trouble with the heart valves. It would have been an utter impossibility for any fragment of clot from the site of operation to have found its way to the brain, and yet something occurred to cause a left-side paralysis, while we would never expect an apoplexy to develop under such circumstances. I think that that was exactly what did occur. Two or three good doctors, in discussing the case with me, said embolus, but you have only to remember the course of the blood to see how impossible it would be for an embolism to find its way from the uterus or ovarian arteries to the brain.

When I was leaving Jefferson Hospital, after serving a year as resident, Dr. Hare, whom I always counted as one of my best friends, and still feel deeply indebted to, asked me if I felt repaid for the time I had spent in the hospital. I told him I did in every way, and particularly so in this one thing, that I thought very likely if I had begun to practice immediately after finishing school, and had come across a number of cases in which I was unable to make a clear and positive diagnosis, I might have been so discouraged that possibly I would have given up the work altogether, but now, after my association with him and Dr. Wilson, I would know that even good men were sometimes unable to make accurate diagnoses, and I would not be so discouraged to find myself in the predicament before mentioned. I feel the same in regard to the report of cases. There is no reason why we should neglect to report fatal cases, as well as those that recover; and now that I have had the courage to report two operative cases that died, I know that you will pardon me for reporting fifty-one operations for appendicitis, that I have performed during the past nine years, with a recovery rate of one hundred per cent. Therefore, up to date, it is my good fortune to be unable to report a fatal case of this disease. These fifty-one cases ranged in severity from a simple catarrahl inflammation of the appendix to one where it was neces-

sary to remove over two feet of bowel that was gangrenous. I had intended to speak of several of these cases—many of them were interesting—every case of appendicitis is interesting, but I will not burden you further this evening.

I thank you for your attention.

DISCUSSION.

DR. MINER.—The second case, the one of gastroptosis, I examined before operation. I inflated the stomach and through the lax abdominal wall could outline it. It was very much relaxed. Since the operation I have again examined her and the gastroptosis has returned to some extent. I believe the sutures were probably too light to hold it.

A CASE OF PSEUDO-LEUKEMIA OR HODGKINS DISEASE TREATED BY PHOTOTHERAPY.

BY DR. M. B. AHLBORN, WILKES-BARRE, PA.

READ APRIL 19, 1905.

Mrs. R.; aged 26; white; born in this country; was formerly, that is before this sickness, in good health. No tubercular history in her family. Her mother and one younger sister suffer from goiter, the patient herself possessing a large one which she says has been present since she can remember, and which has grown larger within the last six months. She was brought to me by her physician for a fluoroscopic examination of the left chest, in order to locate the origin of a lump which appeared in the fifth inter-space near the sternum, and which was giving the patient a great deal of pain, the least touch causing her to scream. The patient presented a very emaciated appearance, dyspnoea was very marked, the entire left chest was edematous and covered with enlarged veins, the cervical glands on that side were somewhat enlarged, but not markedly so, and were not tender on pressure being applied; the thyroid gland was very much hypertrophied and covered with engorged veins. The right arm was very painful and

somewhat edematous, although the axillary glands were very little enlarged, and were only moderately tender on pressure. The face was very edematous, the eye being nearly closed, the patient, according to her story, was perfectly well up to the second week in December, 1904, when she first noticed a cough and tenderness on the right side of the chest. Several weeks after this she first noticed the lump in the second interspace on that side, which increased in size and became very painful. She consulted several physicians and was treated for the condition, but the lump kept on increasing in size and the cervical glands and the thyroid showed a vicious tendency, so that the pressure symptoms in the pleural cavity and the arm were wearing the patient out, nothing but large doses of morphia being of any use in alleviating her suffering. She came to my office with her physician on the 25th of February, of this year, and both a physical and fluoroscopic examination of the patient's chest were made. Percussion gave a triangular area of dullness, with the base in a line with the sternum, extending from the apex of the lung to about the ninth rib, the apex of the dull triangle extending to the mid-axillary line, in a line parallel with the fifth rib. Vocal fremitus was greatly increased over this area. Auscultation gave small whistling rales around the dull area. There was practically no expansion of the right chest at all. Under the Roentgen rays the patient's right chest was seen to be almost completely filled with a mass of nodular appearance. The diaphragm on that side was hardly moved on inspiration and expiration. The left lung was clear. I secured a number of blood smears, and on staining and examining these microscopically I made the diagnosis of pseudo-leucaemia. A count of the red corpuscles at this stage gave me 3,600,000 per centimeter. The whites counted 10,500. In the stained specimen this blood showed a moderate anaemia with an apparently enormous polymorpho nuclear leucocytosis which was only relative, as the whites were only slightly above the normal. There was considerable poikilocytosis of the reds, but no nucleated red blood-cells were present, the haemoglobin was 42.

I advised X-ray treatment of the chest, to begin at once. The patient agreeing, I began giving daily exposures of fifteen minutes each, using a very high vacuum and raying the entire chest from both the front and back without using any protection or shield. In about six days the patient noticed that the lump was getting smaller, but that the pain and edema were increasing. I made an examination of the urine and found albumen present and an enormous sediment consisting almost entirely of urates and phosphates. The patient now began to have all the symptoms of an auto-toxemia, sweats, chills, a temperature of 103°. The dyspnoea became severe and the patient presented all the symptoms of one who could not possibly live a day. Strychnia was administered in large doses to support the heart, and enormous doses of rochelle salts, preceded by enemata were ordered every six hours. After a number of free bowel movements the patient changed for the better, the temperature fell to 99° in the evening of the same day, and the next day she was much better, temperature normal, pulse full and strong. The lump had entirely disappeared. In a week she was able to resume treatments at my office, which I resumed with the utmost vigor, giving as high as twenty-five minute sittings. The pain in the arm disappeared in the course of another week, the dyspnoea became less and the patient began to sleep well and to eat well. I instituted forced feeding and the patient began to enjoy her meals, besides which she was getting about a dozen eggs and two quarts of milk a day. This was about four weeks after treatment was begun. I made frequent fluoroscopic examinations of the chest at intervals of a week and at the end of four weeks placed a photographic plate under the patient's chest while I was exposing her to the rays. The picture, which I have here to-night, while not a work of art on account of shortness of exposure, yet shows that the enlarged lymphatics have shrunk and reduced in size nearly one-half since treatment was instituted. At the present time the patient has no pain of any kind, she sleeps well, eats and enjoys her food, is gaining in weight, and will, I hope, do still very much better. She has no edema of the chest or face,

the goiter is reduced in size, the cervical glands are practically normal, the spleen is normal and is not tender, the blood shows 4,100,000 reds, 10,700 whites per cm. The stained blood shows an increase in the eosinophiles, and large mononuclear cells, with a better all-round condition of the red cells. The haemoglobin is 57. The patient is able to walk around and do a little of her work, and is growing stronger each day. I believe that with this fact before us we have done well so far in a practically hopeless case. We can, without appearing too sanguine, look still further towards a possible result which may look toward the permanent.

PSORIASIS.

BY DR. RAYMOND L. WADHAMS, WILKES-BARRE, PA.

READ APRIL 19, 1905.

Synonyms.—Lepra, lepra alphas, alphas, psora, schapperflechte.

Definition.—A chronic inflammatory disease of the skin, characterized by an eruption of dry, infiltrated, bright red patches covered with more or less thick, white or gray scales.

Etiology.—Psoriasis forms about three per cent. of all skin diseases; it occurs at all ages, most frequently between the sixth and twentieth years, and in all conditions of life. It is hereditary. It is supposed to occur more frequently in those with a rheumatic or gouty history, although it occurs in the healthy, a lowered condition of the general health in those subject to the disease will bring on an attack. The slightest abrasion of the skin of a psoriatic will determine the location of a patch of psoriasis.

Pathology.—The exact nature of the process is not wholly decided. It is thought to be an inflammation of the upper corium with increased growth of the rete, cellular infiltration around the vessels and a large increase of the corneous layers.

Symptoms.—The primary lesion is uniformly a bright red papule the size of a pin-head, covered with a dry, silver-white scale. These enlarged by peripheral extension into larger areas whose edges are always well defined, which have received various names according to their shape and occurrence, namely: punctate, guttate, nummular,, circinate, gyrate, diffused and exfoliative varieties. The scales are characteristic, very abundant and rapidly formed. Upon removing the scales from a patch by scratching, numerous minute bleeding points appear; these are the scratched-off tops of the congested papillae.

There is considerable pruritis in some cases. The extensor surfaces of the limbs are most frequently affected, especially the knees and elbows. Its distribution is usually symmetrical. The trunk, particularly the back, the genitals and scalp are frequently covered, the patches appear less often upon the face. The nails are often affected and may present the only lesion. They become dull, fissured and furrowed. The mucous membranes are not attacked. There is no constitutional disturbance in this disease. When it attacks the scalp it may be in the form of distinct patches or the whole scalp may be covered with a continuous patch. As a rule, the hair does not fall out, but occasionally there may be a transient or permanent alopecia. The palms and soles are rarely the seat of the disease.

In old cases there may be considerable thickening of the skin and painful bleeding fissures may form at the joints.

The course of the disease is variable, although it is essentially a chronic disease, it presents at times acute symptoms. Relapses almost invariably occur, in some cases, though the skin may be free from all disease for months and years. In most cases, some slight spot may be found even when the patient is supposed to be free from the disease. The duration of each patch may vary from a few weeks to years. Most cases are better in the summer than in the winter. When a patch disappears there is no scar left.

Diagnosis.—A typical case of psoriasis, showing variously sized round or oval patches, covered with thick, dry, whitish scales, scattered over the body, but more especially on the ex-

tensor surfaces of the extremities, should offer no difficulty in diagnosis. In less typical cases, it is necessary to differentiate it from (a) chronic squamous eczema, which is more pruritic, has no sharp boundaries, has serous exudation and does not show the bleeding papillae when the scales are removed, nor is its distribution symmetrical.

(b) Seborrhoea, is paler in color, causes less induration of the skin and has scales that are a dirty gray and fatty.

(c) A squamous syphiloderm. In this the lesions are more infiltrated, and of a copper color, less scaly than psoriasis and only last a short time.

(d) Lichen planus occurs on the flexor rather than the extensor surfaces and in the form of a flat, shining, angular smooth papule, rather than a round, freely scaly one.

(e) Dermatitis exfoliativa. Psoriasis is rarely so absolutely universal as dermatitis exfoliativa and usually some discreet psoriatic patches can be found.

Prognosis.—Good as to life and general health. The patches may be removed and the skin completely cleaned, but the disease will return again sooner or later.

Treatment.—The treatment consists of hygienic, medicinal and local measures. The patient should bathe daily, take all the out-door exercise possible, and should limit himself to a good plain diet, no rich gravies nor pastries should be eaten. All alcoholic drinks should be forbidden, especially the malt liquors.

Of the internal remedies, arsenic heads the list, but it should not be given in all cases. When the eruption is increasing or the patches are in an irritable or congested state, arsenic does harm. On the contrary, when the disease is improving, as in any chronic case, in which the patches do not look red and angry, arsenic is indicated; start with small doses and push to tolerance. In those cases, in which arsenic is contra-indicated the alkaline diuretics are of use, potassium citrate or acetate in twenty-grain doses before each meal will quickly lessen the congestion of the patches. Potassium iodide in large doses is found to be efficient by some.

Wine of antimony, in from five to ten drop doses three times a day, has been found useful in some cases.

Before making any application to the skin, it is well to remove the scales by bathing in warm water with an alkaline soap. If the scales are very hard and thick some simple ointment will soften them sufficiently to be removed by soap and water.

Among all the drugs used to remove psoriatic patches none are as effective at chrysarobin. This drug will always produce an effect in the chronic and less irritable cases. It will remove the scales and render the infiltration less. In the irritable and highly congested case, it will increase the irritation and cause the eruption to spread. Chrysarobin stains everything and if rubbed into the eye, will cause a marked conjunctivitis. It is best used in the form of an ointment.

It is well to commence with a 3% or 5% ointment and increase as seems necessary, even up to 20%. This is to be rubbed in thoroughly on each spot.

Fox uses the following:

Chrysarobini, 10 parts.
Acid salicylici, 10 parts.
Etheris, 15 parts.
Collodii flexilis, ad 100 parts.

This is painted over the spots every day or two until they disappear.

The ointment of ammoniated mercury may be used about the face and scalp.

Different preparations of tar are effective but very disagreeable.

At the present time much success is obtained with the ultra-violet light and X-ray. I report one case treated with the X-ray.

F. H.; aged, 11; first came for treatment March 1st, 1904; family and previous history negative. Psoriasis began about September 1st, 1903. On examination, the legs below the knees were almost completely covered with patches. Numerous scattered spots about the thighs, buttocks and back. The arms from shoulder to hands were thickly covered with the

eruption. A few spots on the feet and over knees and elbows, very much thickening and numerous cracks which bled at times. He had X-ray and high-frequency current treatment two or three times a week.

March 13. Some improvement could be seen. By March 27, marked improvement. All spots on the face were gone.

Owing to the extensive area, it was not possible to treat all diseased portions at each treatment. Continual improvement until at time of last treatment, December 28, 1904, the whole body was practically free from spots.

During the summer months treatment was not given so often. Since he stopped treatment he has remained nearly free from the eruption, though some patchs of low grade persist. He had in all seventy-one (71) treatments.

DISCUSSION.

DR. AHLBORN.—I have had nineteen cases of psoriasis. In chronic cases it will often clear up, but they will seldom be cured under treatment. In new cases, any light will do. Roentgen ray or ultra-violet, with a strong light and good care not to burn the patient, these recent cases will be cured. In old cases this is not so sure. Chrysarobin combined with light has the best results. Psoriasis must not be confounded with pityriasis rubrum.

DR. GUTHRIE.—I have seen a number of cases in this locality. Second to eczema it is the most frequent skin disease we have. The cause of the disease has not been found. My experience has been the same as that of the essayist as to treatment.

DR. STACKHOUSE.—I want to call attention to a case I saw in Philadelphia. The body was covered with the scales. It resisted everything until balsam of Peru was used, when it began to improve.

Dr. Davis called attention to the difficulty in diagnosis, especially from syphilis.

DR. SHAW.—I would like to know how this light acts?

DR. WADHAMS.—The case spoken of was not an old one; the recent spots disappeared and the old spots did not reappear. I used light frequently with low vacuum. The light causes a re-action of the tissues.

CEREBRO-SPINAL MENINGITIS.

BY DR. A. L. HAUSLOHNER, WILKES-BARRÉ, PA.

READ MAY 3, 1905.

Spotted fever, or cerebro-spinal fever, was first recognized and described as late as the year 1805 by Vieusseux of Geneva.

During the next decade, limited epidemics were observed, both in Europe and the United States, and subsequently recurring epidemics and pan-demic visitations were noticed. In nearly all the large cities in the country it may be said to have become endemic, and in Philadelphia since 1863.

The pathology is very interesting. The cases that prove speedily fatal do not present gross characteristic changes. By the aid of a microscope leucocytosis may be discovered around the central vessels and round cells in the cortex of the brain, in some cases, encephalitis being already noticeable. On the other hand, the cases in which death occurs after the disease has been fully developed, show the lesions of suppurative inflammation of the meninges of the brain. The arteries, veins and sinuses are engorged; ventricles are distended with liquid; the piamater being mostly affected, its vessels being greatly enlarged and copious sero-fibrinous or sero-purulent exudate occurring in the meshes of its net-work. The longer the duration of the disease, the more purulent is the exudate, the ventricles of the brain being filled with the same. The color of the exudate is first clear; it then changes to milky turbidity, then to pale yellow and lastly to a greenish yellow. The brain is congested and often in spots softened. The exudate may follow the optic and auditory nerves along the lymphatics and pus has been found in the inner ear and in the chambers of the eye. The membranes of the cord may manifest the same changes as are found in the brain. The lungs exhibit the changes peculiar to bronchitis and pneumonia. The pleura, the pericardium and the endocardium may all show inflammatory lesions; the liver and spleen are enlarged; the kidneys congested.

Etiology.—The diplococcus intracellularis meningitides is the specific cause; in the tissues of the organism this is almost constantly found within the polynuclear leucocytes. It develops on Löffler's blood serum and its growth is the same as that of the pneumococcus. Welsh suggests that the meningococcus and the pneumococcus are possible varieties of the same bacterium.

Predisposing causes.—Neither children nor adults are immune to the disease.

Climate.—It is known in the tropics, but is most prevalent in the northern portion of the temperate zone.

Season.—It prevails mostly in cold weather, and is more likely to be found in unsanitary surroundings, ill-ventilated and over-crowded habitations. Excessive physical and mental exertion predispose to the disease.

How the contagion is transferred is not known; but it probably is not contagious. How the virus gains entrance into the subjects is also imperfectly known.

Prodromal symptoms.—These are variable and may be absent when the invasion is sudden. The patient may be vigorous and may be stricken as by a blow. Others complain of headache in the back part of the head; of pain extending down the spine; muscle and joint pain; and at times nausea and vomiting.

The most distinctive feature is a chill; in children, the ushering-in of symptoms may be a convulsion. The temperature rises to 104° or 105°; the pulse to 120 or 140; respirations are irregular; there may be marked dyspnoea. Nervous symptoms are racking headache, hyperesthesia and at times anesthesia. Delirium appears early; muscular contraction is an almost constant feature. The pupils may be dilated or contracted, re-act poorly to light; deafness may come on early.

Gastric symptoms may have diarrhoea or constipation. Renal symptoms, albumen and engorged liver. Kernig's sign —inability of extension of the leg on the thigh when the patient is sitting. The rigor is produced by irritation in the meninges of the lower portion of the spinal cord.

Special types.—Mild, abortive, intermittent, typhoid, fulminant.

Diagnosis.—Lumbar puncture and microscopic examination.

Treatment.—Quiet and dark room; nutritious, liquid diet; warm baths lessen the tendency of spasms; morphine for the headache; cannabis indica for the spasms; mercury, internal stimulants, give freelv; blistering, leeches, laminectomy and free drainage.

HISTORY OF CASES OF CEREBRO-SPINAL MENINGITIS OCCURRING DURING THE PRESENT YEAR, 1905.

BY DR. H. L. WHITNEY, PLYMOUTH, PA.

READ MAY 3, 1905.

In Plymouth we have had yearly idiopathic and isolated cases of meningitis. During the year 1904, there were five cases of well-defined cerebro-spinal meningitis, but as it was not known to be epidemic, nothing beyond a temporary scare was created. At the present time, however, with the metropolitan papers full of reported deaths from "spotted fever," and the local press eager to magnify each supposed case, the people are on the alert and call a doctor for every headache accompanied by stiffness of the neck or back.

As in all epidemics of contagious and infectious diseases, we may have cases so mild as to escape notice, except when the particular disease prevails. We may have all the initial symptoms with complete recovery in a few days—the so-called abortive cases. Although at the onset the disease has set in with all its fury, it subsides just as rapidly. It would seem as if a man's vital forces had conquered the invading host of microbes. The appellation "spotted fever" is unfortunately a misnomer, as regards the present epidemic. The spots are rarely found and variable as to variety and time of occurrence.

Of the five cases in 1904, three died. One recovered after a protracted convalescence, with total deafness and impair-

ment of intellect; the remaining one with atrophic degeneration of one eye.

CASE I. Mary K., Slavish, aged 11, attending school. Was seized during sleeping hours, without any prodromal symptoms, with excrutiating headache, hallucinations, tendency to get out of bed and run from some imaginary foe; intense photophobia, alternating periods of restlessness and semi-coma, from which she could be aroused, but as a reply to all questions, her sole appeal was, "Oh, give me something for my head." Up to the third day, when she passed into an unconscious state, she had an absence of the usual muscular rigidity and would hop out of bed and roam aimlessly unless restrained. She remained unconscious for two days and then in a partially comatose state for one week. During this dull period, upon attempting to lift up the head, which was not retracted, she would have a tetanic seizure of the whole body. Similar results were obtained after Kernig's manipulations. (To practice Kernig's test it is not necessary to have the patient sit erect in bed and extend the legs. It is much easier, although not as elegant, to permit him to remain in the prone position, squarely on his back, elevate the legs in mid-air, forcibly straighten the leg or legs and at the same time flex the legs toward the head. The patient will respond as if shocked by a battery. Any procedure which will put the sciatic on the stretch will send the impulse up the spine.)

For several days her temperature reached 105°. After ten days, her temperature reached the normal point. When she regained consciousness, I discovered that she could not hear. During her slow convalescence I was again hastily summoned and found her in a semi-unconscious state with a temperature of 105°, but without the nervous and convulsive symptoms. In two days' time the temperature returned to normal without incident. Although the attack occurred three months ago, she is still totally deaf, even to tuning fork bone transmissions. Her intellect is not at all impaired.

Treatment.—Ice to head, biniodide of mercury, one-hundredth grain every two hours for one week. Bromide chloral

and heroin for quiet. Latterly iodide of potash in hopes of restoring the hearing, but without effect.

CASE II. Spencer L., aged 10. Naturally nervous temperament. Was suddenly stricken with unbearable headache, vertigo, nausea and explosive vomiting. Pain in head remittent and described as pins and needles pricking inside the head. Pain extended to back of neck and spine, mind wandered. Intense photophobia. While apparently asleep would cry out. Face always bore an expression of pain. Temperature first day 103°, second day 104 5-10° third day 103 5-10°, reaching normal on fifth day. Rigidity and Kernig's symptom. Recovery in one week without any lesion.

CASE III. Mary J., aged 7. Seen in consultation. Usual sudden onset passing into a comatose state within twelve hours. Within twenty-four hours she had complete motor and sensory paralysis of right side, with constant convulsive movements of left side. Next day the left leg ceased to move. Finally the left arm became quiet. The patient died on the fourth day.

CASE IV. Lizzie C., aged 15, seen in consultation. Had been dismissed from school on day previous on account of severe headache and nausea. Came home at 11 A. M., and by 3 P. M. of same day was comatose. Lay in bed perfectly listless and limp. No reflexes. Swallowed with difficulty. Bowels reacted to physic. Temperature 101° to 103°. This was a typical adynamic case. From the very onset of the disease, the system was simply overwhelmed and there could be but one result which occurred on the fourth day. On the same day that she was taken ill, a child, aged 2 years, living in a rear house near the same lot, was stricken and died in six hours.

CASE V. Mary D., aged 5. Complained of severe headache and vertigo. Stiffness of neck, nervous vomiting, marked insomnia, rigidity of nucha. Kernig's test elicited pain shooting up neck. General muscular pains. Highest temperature 103°. Marked herpes about lips. Recovery by crisis in six days. This was an undoubted but very mild case.

CASE VI. Alfred R., aged 20. Seen four times in consulta-

tion. On April 16, ate hearty supper. Went to Welsh Church at 6 P. M. During service nausea came on with a frightful headache. Pains in chest were so marked that adynamic pneumonia was thought of on account of accompanying marked prostration. The following day pulse irregular. Temperature 100°. Had vomited freely. Upon forcibly lifting his head, spasmodic contractions of trunk and arms were caused. Responded to Kernig's test. He was so comatose that no intelligible replies could be elicited. He apparently could not hear. After bowels moved by laxative, vomiting ceased. Took everything put in mouth. If a piece of orange were partially inserted in mouth, would try to work it inwardly with lips. Failing in that, would shove it in with a finger. All other movements and remarks were incoherent, except when I was experimenting to see if I could make him find his mouth after placing piece of orange in hand. This failed, but he apparently had a lucid interval. He looked straight at me and in a good, clear voice said: "Do you like oranges?" I nodded assent. He said "I do, give me some more." Constantly picked at bedclothes and talked about his work. Temperature never above 102°. Death in five days. Slight petechial rash on body during third day. Herpes labialis.

Cases VII, VIII, IX, X, XI. The Breslau cases, have been a study in themselves. On the only cross street running parallel with the Susquehanna River, near the old Plymouth ferry road, is a long block, accommodating four families. They have one privy vault in common, one driven pump, fifteen feet to landward of privy, each house full of children. In one of the middle sections lives Wincenty Dobyczinski, a Polander of more than usual intelligence.

I was called in Monday afternoon, April 24. Found two children, aged, male 4, female 6, in same bed with a history of vomiting and marked prostration. Boy was suddenly attacked during the previous night, the girl was similarly affected as daylight approached. My first impression was that I was dealing with cases of ptomaine poisoning. Inquiry as to diet was negative. During my examination as to profound shock,

elecited marked tenderness of nucha and slight reaction to Kernig's test. I was asked to see boy who had just been sent home from school. He conversed with me in English, while the other two were too dull to talk at all. Was seized with vertigo and vomiting. With difficulty walked home, taking several rests and vomiting each time. Complained of intense headache and decided lassitude. Was sitting in chair. I ordered him to lie down on the lounge. There was still a babe of one year and four months and a girl aged 8, who was still at school. I suggested that she be kept out of the house and was told that she could go to her grandmother's, across the street. The next day found both patients in bed worse. Both semi-comatose, the boy apparently not hearing. The girl would only partially answer her father's interrogations. Both had muttering delirium, retracted heads, constant tossing about as if searching for a softer resting place. The boy that I expected to find on the lounge, was out doors. I protested and insisted on his keeping quiet, but he maintained that he was better, except that he felt as if he was drunk. His gait indicated as much. The same afternoon, after going up and down stairs, he expired. I had stated that the girl would be the first to pass away, and was chagrined to think they would permit the boy to die while walking around. Next day, my third daily visit, found babe 16 months old, and girl 8, who had come home from grandmothers', with same symptoms as others. The oldest girl had been stricken with that brutal suddenness so characteristic of the rapidly fatal cases. She was crouched in bed, too weak to move, limbs flexed on abdomen, head hidden in pillow. Temperature, sub-normal. Did not disturb her for reflex nervous symptoms. Complained of intense headache. Was dull and apathetic but would answer yes or no to all questions, if aroused. The baby was a mild case, but still had tenderness of nucha, retraction of head and Kernig's symptoms. However, it noticed everything. Temperature 100°.

Next day, my fourth daily trip, found girl of 8 years very pale and considerable dyspnoea, owing to irregular weak heart

action. However, she was conscious. I still maintained that the girl of 6, who was originally stricken, would be the next to go. She lay in bed, perfectly motionless, with sub-normal temperature, sordes of lips and agglutinated eyes. I was again wrong; the oldest girl, who had not yet been sick forty-eight hours, passed away without reaction from invasion stage. The girl of 6 years finally began to react after one weeks' time. Temperature rose to 100° and 101°. For the first began to take milk and eggs. Although I could never make her talk, her father claimed she understood everything. She was apparently in a septic state. Offensive diarrhoea, tongue brown, sordes, gelatinous film over both eyes.

I had ceased giving a fatal prognosis as to this case after she began to take nourishment, and instead mentioned probable blindness. She died on the twelfth day, with right cornea partially sloughed and a large ulcer on left cornea. All that is left of the family of five children is the sixteen-month-old baby, which has convergent strabismus, as her relic of the siege, and the boy of four, who is totally deaf. This boy was apparently cured by crisis at expiration of one week, but a few days later after cessation of all symptoms and a normal temperature, developed a secondary fever with partial return of previous symptoms. As I had lost three out of five cases, the father came to the conclusion that I did not know how to treat the disease, and expressed a desire, to which I readily assented. to have some other physician try to cure him. The secondary fever persisted for one week. The boy is now well. I have had no opportunity to test his hearing with a tuning fork bone vibration. Although three weeks have elapsed since the outbreak in this family, none of the children in the remaining three sections of the block have acquired the disease, nor has there been another case in the village of Breslau. I could discover no reason why all the children and only the children of this one family should be afflicted.

CASE XII. Mary B., aged 11, Slavish. Had decided headache, marked prostration and restlessness. Cried out at frequent intervals. Temperature 102°. Stiffness of neck and

general muscular soreness, marked vomiting for two days. Pupils would not react to light. It required large doses of bromide and chloral to control patient. Was delirious, alternating with semi-coma for four days, when recovery by lysis apparently took place. In three davs more, she was able to walk and eat. But these favorable symptoms only lasted two days. Her fever returned and with it the headache, tenderness of neck and general myalgia with a temperature of 101½° to 102½°. This condition has persisted for twelve days. She is peevish, but no longer delirious. At times, complains bitterly of head, which she holds in a retracted position. Upon application of Kernig's test, complains of pain in knee and up spine. Impossible to straighten out legs while sitting erect. Eats moderately well, occasionally vomits, tongue clean. I have no doubt as to her ultimate recovery without lesions. This secondary fever is presumably caused by absorption of pus or liberation of some encysted nidus of germs, thus reproducing the original symptoms. The latter theory appears more rational since, as in typhoid relapses, there appears to be a new infection and a new course of original symptoms, but in a less severe form.

Case XIII. Myrtle T., aged 5. Vomited all day. Complained of severe headache and soreness of nape of neck. Also complained bitterly when moved or disturbed. During the evening of the same day had a convulsion, during which I was first called. Convulsion was controlled by chloroform. After the convulsion, remained comatose one hour and semi-comatose two hours, followed by mild delirium and fever. The next morning I found her very dull and listless. Nervous vomiting, the act of which afforded no relief, continued incessantly. Even water would be violently ejected. Under morphine narcosis, would apparently rest for half a minute and then give the most heart-rending screams. If attention was fixed, she would answer all questions intelligently. Died in forty-eight hours. Temperature never over 102°. Uncontrollable vomiting persisted until the last. Unable to move bowels.

Case XIV. Hamilton C., American, aged 18. Headache

with giddiness, followed by vomiting, came on suddenly while at Sunday school. In a few hours, had a chill, followed by great depression. Next morning he had reacted after a restless night. Temperature 102°. Bowels had acted after administration of sodium phosphate and Rochelle salts. With opening of bowels, vomiting ceased. Weakness out of proportion to visible symptoms, only moderate tenderness of neck on motion. Temperature reached 104° in evening, but pulse only 96°, at the same time full and bounding. Had atrocious cephalalgia, controllable delirium, muscular tenderness all along spine. Pain shot up spine after Kernig's manipulations. On fourth day petechial rash on forehead. With the appearance of this rash the headache became intermittent and pains centered in spine. On the evening of the fifth day, temperature 104.5°. Headache had entirely ceased, but still had marked intermittent spinal pains. During the night he perspired very freely. Next day, the sixth of the disease, he had no fever at all and began a speedy convalescence.

This was a recovery by crisis, temperature dropping from 104.5° in evening to normal the following morning.

On the day following, however, he had a mild secondary fever which lasted two days.

Case XV. Anna B., Slavish, aged 6. Suddenly seized with persistent vomiting, accompanied by severe headache, nervous twitchings and tenderness of nucha. Pain would shoot up whole length of spine after Kernig's manipulation. Temperature 102°. The usual train of symptoms supervened, the little patient becoming comatose on the fourth day, and died on the sixth day of disease.

Case XVI. Anna O., aged two and one-half years, Polish. Was taken with vomiting which became persistent and uncontrollable. Patient apparently not very ill. Would permit all manipulations without evidence of pain. Temperature 101° to 103°. As the child was too young to answer questions, the objective signs were the only available points with which to establish a diagnosis. I was perplexed, but diagnosed cerebrospinal meningitis, by observing marked lassitude, obstinate

vomiting with constipation, which could not be overcome and particularly by the position assumed by the child. When picked up for examination, she would invariably tell her attendant that she wanted to go to sleep. When replaced in bed, would shift around and finally, whether on back or on side, would assume a position with retracted head and flexed knees. Did not sleep at all. Died on the third day. I treated symptoms only. In other words I treated the condition and not the disease. Exhausted all my resources in trying to overcome vomiting and constipation.

CASE XVII. Louise H., American, aged 19. Anaemic. Worked in hose factory all day Wednesday. Attended a ball Wednesday night. Retired after midnight. At two o'clock called mother on account of headache. Vomited bilious matter. At daylight, Thursday morning, mother found her dull and listless and still sick at stomach. I saw her at 8 A. M., six hours after initial symptoms. Temperature 101°. Occasionally vomiting. Gave at once 30 minims Aulde's multitoxine. She received five such doses at intervals of four hours during the first day. At daylight her mother had found her in a partially unconscious state from which she aroused her and tried to have her walk down stairs. She fell in a heap and had to be carried to bed. When first injection of pure multitoxine was given, she apparently did not feel the pain, which is always marked. She was perfectly unconscious all day until 5 P. M., when, during toxine hypodermic, she raised up and gave me that characteristic vacant stare and attempted to mumble some words. Her temperature at this time was 104° in the axilla. During the whole day her pupils reacted slowly to light. Head retracted, and when forcibly bent forward, her countenance portrayed pain. Kernig's test brought on convulsive movements, and it was impossible to extend legs while in that position. A laxative had been given, and after the first bowel movement, vomiting had ceased. When seen at 10 P. M., was still partially comatose, but would, when aroused, intelligently answer simple questions. When seen Friday morning, the beginning of the second day of sickness, her con-

dition was flattering. She had normal temperature, normal pupils, pulse accelerated, but still good. She held the thermometer unassisted, in mouth, noticed everything and even smiled at some little pleasantries. Did not remember any occurrances of previous day, after her enforced attempt to walk down stairs. The usual movements still elicited pain. This was only a lull before the storm, which came at 10 A. M.; became very restless, gave hydrocephalic cries, relapsed into a state of complete coma with ascending temperature. During the night it was almost impossible to keep her in bed. Complete opisthotonos with arched belly. This condition gave way to one of complete paralysis, which occurred towards morning. When seen at 6 A. M., Saturday, her condition was markedly apoplectic. Slow, deep respirations, all sensation and motion gone. Pupils contracted; slight twitching of eyelids; no other reactions. Temperature 110°.

The multitoxine had been continuously given, also sodium salicylate when she could swallow. As the symptoms were so distinctly indicative of pressure, I was tempted to perform lumber puncture, but as she had no convulsions to send up the temperature, which high point could only be explained by a complete systematic invasion, I did not feel like wasting my time. At noon her temperature reached 112°. The respirations at that time remaining slow but shallow. The pulse at wrist was gone but heart was still beating. She died at 1 P. M., Saturday, sixty hours after invasion of disease.

Case XVIII. William M., American, stationary engineer, age 37. While preparing for work in the morning he was taken with severe cephalalgia. The pain in head was so marked, and accompanying weakness so great, that he was compelled to sit down for a few minutes before repairing to an adjoining room. I saw him shortly afterward. He had marked headache. Temperature 101°. Tenderness at back of neck, also along spine. Saw him same evening and same symptoms persisted. Had given him migraine tablets, heroin and salicylate soda, also cathartic pills. Next day pains had left head and partially left spine. Although I had pronounced it cerebro-

spinal meningitis, had not reported it to the local health authorities, as I considered it a truly abortive case and did not expect further developments. However, on the third day of the sickness, after one day of marked remission, the spinal symtoms became well pronounced and a quarantine was established. Upon flexing head upon chest, he had pains down spine. After leg manipulations had pains shoot up as far as shoulders and along course of sciatic nerve, especially at the knee. Temperature normal. He is still under treatment. Now, at the fifth day of the disease, his tongue is clean, appetite fair, no headache. When perfectly quiet feels good. No muscle soreness or rigidity upon palpation, but when Kernig's test is applied the pain is unbearable, and he immediately springs back into the prone position.

CASE XIX. Louis R., Polish, aged 5. During night complained of pain in stomach, but no vomiting. Very restless, complained of pain in head and general myalgia. In morning was found unconscious by Dr. McKee. We examined him in consultation at 1 P. M. I fully concurred in the diagnosis. He was totally unconscious, involuntary discharges of urine. Rolled around the bed until he assumed the at-rest position of cerebro-spinal meningitis, *i. e.* retracted head and flexed knees.

This position is so typical, that when I glance at a supposed case for the first time, I immediately jump at conclusions and begin corroborative tests. His temperature was 101°. Upon overcoming rigidity and forcibly flexing his head on to chest, his contorted facial expression gave evidence of pain, and he twisted out of my grasp, but uttered no sounds. Likewise, upon application of Kernig's sciatic test, he would squirm back into his favorable position.

Aulde's ideal multitoxine treatment had already been instituted. 30m. hypodermics of toxine every four hours, bicarbonate of potash until saliva alkaline, nucalcide to overcome formation of pus. The following morning a marked change had taken place. Boy was perfectly conscious, and although did not care to answer questions, would do so if hard pressed. Tongue very flabby and anaemic looking with heavy coating.

All indications pointed to a decided infection. Pulse and temperature normal. Assumed an air as if wished to be left alone. Bowels had been moved by an enema. However, reflex symtoms persisted.

Treatment continued with a laxative added and alternate hypodermic of multitoxine and nuclein. Next morning bowels had moved. Temperature 99°. Mind somewhat clearer; takes liquid diet; tenderness of nucha and Kernig's symptoms persisted.

Injections of multitoxine suspended. Nuclein continued. To-day he is in about the same condition. Rigidity of nucha with retracted head and marked rigidity of legs, and cries with pain upon attempting Kernig's test.

The diagnosis and prognosis are the most important points to be remembered. During epidemics even the aborative cases, lasting one or two days, are readily recognized. The disease is very capricious and occasionally the very symptoms for which we are looking are not found. Sometimes the stiffness of neck or retraction of the head are not present. Vomiting may also be absent. The patient is quite limp and may die in collapse. There may be a normal temperature or a fever lasting but one day.

The suddenness of the onset of headache, either nervous symtoms with emesis, or state of collapse without vomiting, in the absence of known causes, are sufficient to establish a diagnosis.

The typical cases have lancinating cephalalgia, explosive vomiting, retracted heads, with tenderness of nucha and Kernig's symptoms. The spots are rarely seen. In late cases muscular rigidity supplants Kernig's test.

As the mortality varies from 50 to 90 per cent., it is always well to acquaint the relatives of the possible outcome. Even some of the seemingly mild cases expire suddenly without apparent cause. Other cases have apparently recovered but a relapse suddenly comes on and the patient passes into a comatose state and dies.

The treatment is purely symptomatic. I have used biniodide

of mercury 1-100 grain every two hours in children with apparent benefit.

When indicated, the nerve sedatives must be used to induce rest. I find that heroin acts well in case of children. Salicylate of soda controls peripheral myalgia. Multitoxine, although used but twice, would seem to have a beneficial effect, as in both cases, the patients rallied from a comatose state in twenty-four hours' time, the one relapsing, the other on the road to apparent recovery.

I have not tried diphtheritic anti-toxine, as the reports are conflicting.

REPORT OF A CASE OF CEREBRO-SPINAL MENINGITIS.

BY DR. W. G. WEAVER, WILKES-BARRE, PA.

READ MAY 3, 1905.

Mrs. H.; married; age 50; residence, high, dry and healthful; surroundings ideal, from a hygienic standpoint. Patient returned from New York City on Wednesday, April 5th. On the following Sunday, April 9th, she was seized with violent pain in the head. I was called about noon, and saw the patient three-quarters of an hour later. There had been no distinct chill, and the headache was chiefly frontal. There was a feeling of soreness and some stiffness in the muscles of the neck. Temperature and pulse about normal. Tongue clean and bowels constipated. I prescribed calomel in divided dose, to be given every hour, and phenacetine, gr. 5 every two hours. There being little relief from the pain, at 7 o'clock in the evening I prescribed migraine tablets and codeine, these to be given alternately through the night. I saw patient at 8 a. m. Monday, April 10th. There being no relief from pain, and considerable photophobia, I injected three-eighths grain morphia. The temperature was now 100° F., pulse 80. Leaving the patient at 8:30 I came up town and sent Miss Dundon, a trained nurse, to care for the patient. At 10:30 the first record

was made by Miss Dundon. The pulse at that time was 88, respirations 26, temperature 100⅗° F. The patient vomited after drinking six ounces of Mag. Cit. The calomel had not been effectual. At noon the temperature was 102° F.; pulse 94. At 3 p. m., when I saw the patient, the temperature was 102⅗° F., pulse 78. By this time there was a marked change in the appearance of the patient. The pupils were unequally dilated, there was beginning ptosis, and the patient complained that she could not see. A test being made, she said she could, with difficulty, see my hand. There was neither delirium nor unconsciousness. There was an increase of soreness and stiffness of the neck, but no decided retraction of the head. Morphia and codeine were administered through the day. At 6 p. m the temperature was 102° F., pulse 80. At 8 p. m. the temperature was 101° F., pulse 84. The nurse reported her more comfortable at this hour. I left word that I should be called if needed, and that the morphia should be continued in dose sufficient to control pain. At 11 p. m. the temperature rose to 103⅗° F., the pulse to 88, respiration 34. Patient very restless. At midnight the temperature was 104° F., pulse 88. At 3 a. m. temperature had reached 106°, pulse 122, respirations 36. At this time I saw the patient. The head was drawn back till the occiput rested upon the shoulders, and the chin was thrown strongly forward. The pupils were widely dilated and the hearing very difficult. The patient was very restless. It was impossible to give an effective bath on account of the constant rolling of the patient. The patient was able to speak only in a very broken manner, on account of progressive paralysis. At 4 a. m. the temperature was 106°, pulse 138. At 5 a. m. it was 106⅗°, pulse uncertain. At 6, 8 and 9 a. m. the temperature was 106⅗°, and the pulse could not be counted. The patient died about 9 a. m.

There was no distinct eruption. At 3 a. m. of the morning in which death occurred there were patches of erythema, especially on the back.

The diagnosis was made with difficulty. The absence of a chill, of fever, and the presence of a practically normal pulse

made it difficult to pronounce it a case of cerebro-spinal meningitis, and yet on the first day of the disease I expressed a strong suspicion that it would so prove to be, on account of the terrific headache, without other explanation for it.

The prominent symptoms leading up to the diagnosis were, on the first day, extreme headache and photophobia; on the second day, great restlessness, dilatation of the pupils and ptosis, increasing difficulty of vision, amounting at last to blindness, gradual deafness, and in the last twelve hours, the characteristic opisthotonos of this disease. There was also marked hyperesthesia of the skin. The characteristic position of the body was also well marked on the second day, the patient lying on the left side with the body arched, the thighs drawn up, the left foot crossing the right ankle.

This was undoubtedly an imported case, the disease being contracted in New York.

A CASE OF CEREBRO-SPINAL MENINGITIS.

BY DR. S. M. WOLFE, WILKES-BARRE, PA.

READ MAY 3, 1905.

On the morning of April fifth, I was called to L. D., aged 47, a traveling salesman, who presented the following history: Family and previous personal history negative. Patient had been in the best of health up to present attack. On the previous day he had made his usual business trip through town, and after reaching home about 5:30 P. M., had worked in the garden till dark, and shortly after 10 o'clock had retired to bed feeling as well as ever. At 2:30 he woke with a chill, which lasted more than an hour. After this he was very much nauseated and vomited a considerable quantity of bile. I saw him at 8 A. M. and found him still vomiting and suffering severe pains in the thighs and legs. His pulse at this time was 140 per minute; temperature 106° in axilla; tongue dry

and parched and covered with a brownish fur. He complained of soreness in the muscles of the neck; the conjunctivae were violently inflamed; he was profoundly prostrated. There was no headache or pain in the back nor any rigidity of the spinal muscles at this time. I saw him again at 11 A. M. and found that his temperature had dropped to 99°; the pulse still remained at 140 and was small in volume; the vomiting had stopped and he was extremely weak and did not respond promptly to questions. At 4 P. M. I saw him again and his condition seemed so much better that I began to believe I had been mistaken in the diagnosis of cerebro spinal fever I had made at the first visit. At this time his pain had subsided; pulse 120; no vomiting; muscles of neck comfortable, although still rather sore. At this time he talked to me freely and seemed brighter and better generally. At 10:30 I was called again and found his condition extremely bad; he was suffering extreme pain, particularly in the lower extremities; he had no elevation of temperature, but the pulse was 165 and weak in volume; the vomiting had returned and he had gone into a stupor from which he could be only partially aroused, and that with great difficulty. In spite of this stupor and extreme prostration there was marked hyperesthesia of the entire skin surface; patient would draw away from the slightest touch long after he was unable to respond to questions. I catheterized patient at this time and examined the urine, but found no albumen. An hour later patient was comatose and remained so until his death, at 2:30 P. M. the same day. About eight hours before death he developed a marked purpuric eruption over the chest and back, some of the blotches being half as large as an ordinary hand. At the same time his breathing became "Cheyne Stokes" in character and remained so till death. After the high fever at the onset the temperature remained normal till death. Throughout the attack there was obstinate constipation. All manner of means were tried to move the bowels, but all failed.

DISCUSSION.

DR. LENAHAN.—I would like to report the case of the nurse, Miss Coyle. Dr. Wagner saw the case first, in the absence of Dr. Butler. She had the usual symptoms of spotted fever. Dr. Butler prescribed anti-toxine; 3,000 units the first day, and 3,000 units the second day. The opisthotonos disappeared after the first dose as did the spots. The patient became more quiet. The patient is now on the road to recovery.

Last summer I saw a case with Dr. Gilligan. Ergot and counter-irritation to the spine were used in this case. It recovered.

DR. ASHLEY.—One week ago I saw a case in a little girl. To-night I saw the mother. She was taken in the same way as the little child, and I believe she is coming down with the same disease.

DR. WEAVER.—As Dr. Wolfe remarks, there seems to be marked differences in these two cases. His case started with high temperature. In my case there was not high fever. Both were simular in regards to constipation. There was also hyperaesthesia. The eyes were contracted in his case. Blindness came on rapidly. Hearing was soon afterward lost. They did not become unconscious until later in the disease. In my judgment of these cases the diagnosis can be made by the stiffness of the neck and rigidity and pain in the head and limbs. These cases take enormous doses of morphine, which should lead one to make the right diagnosis.

DR. BARTON.—I have only seen one case since I have been in practice. I saw a case on the 22nd of March. A woman, aged 35 years, complained of pain in the back and limbs. I diagnosed grip. She became delirious and I was called again. She had not taken the medicine, her pulse was 58 and temperature 97. She was nervous and seemed to fear she was going to be struck on the head. Later she vomited. I gave a hypodermic of one-quarter grain of morphine and placed ice on the head. Four hours later she was worse and very restless. I gave one-half grain of morphine. Temperature 100 and pulse 80. I had given in four hours three-quarters of a grain of morphine. I then prescribed phenacetin gr. 15, salol gr. 15, every three hours. On my visit in the morning there was pain in the back of the neck and head over the occoput. Pain and stiffness in the limbs. I then prescribed bromide of potassium. She then became more quiet and finally comotose for the next four days.

On the second day her head was back between the shoulders. The patient could not be aroused. Temperature 98 to 104½. Pulse rapid. Marked herpes. Her tongue was dry. She was apparently in a typhoid state.

DR. WOLFE.—As regards to treatment; mild cases require little treatment, severe ones respond to none. Dr. Wolf of Boston, reports a number of cases treated with anti-toxin. I don't think cerebro spinal meningitis is any more contagious than pneumonia.

DR. WEAVER.—I think the disease is contagious and more so than pneumonia. It is apt to go through a whole family. It does not hit every family, but when it hits a house it goes all through it.

DR. MCKEE.—Dr. Whitney mentioned multi-toxin. Some two weeks ago I saw Dr. Aulde. He recommended the multi-toxin and showed me some reports of cases where it had been used. An alkali should be given as most of the secretions are acid.

DR. CORSS.—The disease does not always invade the entire family. I have seen several cases where they were the only ones effected in the house. I have used bromide of mercury, and in a large series of cases constipation was present in all fatal cases. I also think the most of the cases are a malignant infection by the influenza bacillus.

DR. WEAVER.—I want to call your attention to the positions in these cases. It is not a true opothotonos. This was pointed out by a physician in California who saw a number of cases in Michigan. The usual position is not typical opothotonos. The thighs are often bent up, the patient lies on its side, one foot is generally turned over the other. The very rapid course of these cases leaves nothing to be desired in the diagnosis.

GASTRIC ULCER.

BY DR. W. C. GAYLEY, HAZLETON, PA.

READ MAY 13, 1905.

Ulcer of the stomach is a solution of continuity or local loss of substance in the mucous membrane. It may involve the sub-mucous and muscular layer, may be acute or chronic, measuring from one-half to six inches in diameter. The acute ulcer, by reason of the rapid distruction of tissue, assumes a well-defined outline—as if cut out with a punch. The cause of gastric ulcer is due to traumatism, anaemia, chlorosis, arterial degeneration, thrombosis, emboli, or any other disease which produces a disturbance of the equilibrium existing between, first, the gastric secretions; second, a normal blood supply, and third, healthy nerve impulses, resulting in local loss of nutrition and consequent loss of vitality of circumscribed vascular areas; this disturbance can exist previous or coincident with the appearance of the lesion. The loss of resisting power of local areas affords the gastric secretion an opportunity to exercise its digestive power with unfavorable results. Schiff produced ulcer by injury to the anterior corpora quadrigemina, hyperchlorhydria resulting from cerebral irritation. Koch and Ewald secured the same result from section of the spinal cord and introducing a hyperacid solution of hydrochloric acid into the stomach. Silberman, by introducing substances into the blood channels, destroying the blood corpuscles, has developed ulcer, also, Daettwyler, by causing anaemia. Virchow considers that ulcer is due to hemorrhagic infarcts. Traumatism alone will not produce ulcer without the disproportion of above intrinsic factors, as the immunity of the mucosa is demonstrated by swallowing knives, nails and tacks. Alkalinity of the blood does not prevent autodigestion of the stomach, as advanced by Pavy. Samuelson, by neutralizing the blood and introducing acid solutions into the stomach, caused no destruction of tissue. When we know that the pancreas does not digest itself, this theory becomes untenable. Hunter advanced the theory of "vital principle," which seems most ra-

tional and acceptable. The living cell, by reason of a normal supply of nutritive material and healthy nerve impulses, possesses within itself or the protoplasm contained therein the proper resisting power to the gastric secretions. Therefore the predisposition to a disturbance of these normal factors, as in tuberculosis, constitutes the initial origin of ulcer of the stomach. In chlorosis and anaemia the tendency is to an excessive secretion of hydrochloric acid, one of the most prominent contributing factors; it is almost always constant, rarely is it diminished or absent. Riegel in 382 analyses of forty-two cases, developed its presence. The frequency of ulcer in women is from the twentieth to the thirtieth year, and from the thirtieth to the fortieth in males. Women suffering from chlorosis and anaemia, the poor and ill-fed, are most susceptible. Ulcer in women between the ages of twenty and thirty are prone to perforate with only the vague symptoms present as found in dyspepsia or gastric neuroses.

In Welch's statistics 75% of all cases occur between the twentieth and sixtieth year. The location, according to Welch, is as follows:

Lesser curvature	36.3%
Posterior wall	29.6%
Pylorus	12. %
Anterior wall	8.7%
Cardia	6.3%
Fundus	3.7%
Greater curvature	3.4%

The symptoms which guide us in diagnosis are, tenderness, pain, vomiting, hemorrhage and perforation. Pain is usually present, especially after taking food, and continues until the stomach empties itself either by vomiting or discharging its contents into the bowel. The ingesta by its presence irritating the nerves at the floor of the ulcer causes this pain, also increased motor and excessive glandular activity. Coincident with ulcer catarrhal gastritis is frequently present which accentuates the sensitive condition of the mucosa. Occasionally there is only tenderness with indefinite symptoms. If, after taking food, vomiting is coincident with the acme of the gas-

tralgic attack, relief immediately following, ulcer should always be suspected. Pain is usually located slightly to the left of the ensiform cartilage, and may extend through to the spine. I do not believe that the site of the lesion can be diagnosed from the location of pain. Ulcer can remain in a latent form without manifesting any pronounced symptoms, presumably because it is located outside of the active motor areas. Hyperacidity of the gastric secretions is due to the excessive glandular activity. In pyloric involvement, with obstruction either from pylorospasm or stenosis, dilatation of the stomach may result with glandular atrophy in which case there will be a diminished percentage of hydrochloric acid. Any prolonged suffering from pain and vomiting will eventually result in malnutrition and emaciation. Hemorrhage may be profuse and alarming, or only moderate. It is always important to examine the stools for blood, as moderate bleeding can occur without vomiting. In one patient under my care the quantity of blood lost caused a condition of profound syncope with mild delirium; his improvement was slow and tedious. Two years after this he had another severe hemorrhage, from which he recovered, and has been well for eight years. The gravest symptom is perforation, death usually resulting in a few hours. Four years ago I saw a patient suffering the consequences of perforation. He presented the typical symptoms: extreme pallor, hippocratic face, cold extremeties and subnormal temperature. Two weeks previous he had a slight hemorrhage, and improvement was quite satisfactory, until without warning perforation developed. There does not seem to be any well-defined symptoms to enable us to diagnose between acute and chronic ulcer. The mortality is from fifteen to twenty-nine per cent. in all cases, according to different statistics. Some of the complications are chronic interstitial gastritis, dilatation of the stomach, pericarditis, embolic infection of the liver, embolic pneumonia, cicatrical contraction of walls of stomach and subphrenic abscess. Ulcer can be diagnosed from gastralgia by increased pain after taking food, which relieves pain in gastralgia. Epigastric pressure accentuates pain in ulcer, affords relief in gastralgia—

hemorrhage frequently present in ulcer—not in gastralgia. Hyperchlorhydria usually present in ulcer often absent in gastralgia. The dorsal pain is more acute in ulcer. In cancer hyperchlorhydria is absent. Pain is not paroxysmal until the latter stage of the disease, when a tumor can be detected. In gastric crises of a tabetic patient you have the ataxic symptoms, the eye phenomena and absence of patella reflex.

In parenchymatous hemorrhage of alcoholics you have the previous history and hepatic involvement. In vicarious menstruation the gastralgic factor is not present.

These are the salient diagnostic points, but in many cases the symptoms are so indefinite that a differential diagnosis is impossible. Whenever you suspect ulcer of the stomach, place the patient in bed, administer no food by the mouth, use rectal alimentation for ten days or two weeks, hot compresses to the epigastrium for relief of pain, large doses of bismuth subnitrate. (Sixty grains.) For thirst you can give iced alkaline mineral water, or cracked ice. DaCosta cured some patients with an ice cream diet and no rectal feeding. After subsidence of acute symptoms, begin careful feeding of the stomach with graduated quantities of peptonized milk. Nonacid preparations of iron should be used in anaemic patients as early as possible. During convalescence sunshine and fresh air are of benefit. Silver nitrate is recommended in solution, not in pill form. The stomach tube must be used with caution. When hemorrhage has developed, if ever so moderate, it should not be used. Einhorn claims there is no necessity for its use at any time, the viscus always being able to promptly empty its contents. The only indication that suggests its use would be in pyloric involvement with obstruction unaccompanied with hemorrhage. In chlorotic patients administration of iron must be persistent, with a return of anaemia a relapse is to be expected. If hemorrhage occurs apply ice bag to epigastric region, hypodermoclysis of normal saline solution in *moderate* quantity if patient is exsanguinated, morphia wtih atropia hypodermically to quiet patient and inhibit peristaltic activity. After acute symptoms subside the treatment should be same

as mentioned above. It is a questionable expedient to use large doses of either ergotin or adrenalin in profuse hemorrhage. The lowest arterial pressure that is compatible with life is desired, in order that the clots plugging the vessels should not be disturbed. For thirst, enteroclysis of saline solution.

When shall we solicit the assistance of the surgeon? I would answer, only after three or four attacks of hemorrhage. In chronic cases after a reasonable period of treatment without improvement—in plyoric involvement with stenosis and in perforation.

DISCUSSION.

Dr. Weaver.—I had a case of ulcer of the stomach in the early days of my practice. I maintained rectal alimentation for thirteen weeks. There is only one case on record where the time of rectal alimentation was kept up any longer.

APPARENTLY UNAVOIDABLE ERRORS IN THE DIAGNOSIS OF PSOAS ABSCESS.

BY DR. H. AUGUSTUS WILSON, PHILADELPHIA, PA.

PROFESSOR OF ORTHOPEDIC SURGERY JEFFERSON MEDICAL COLLEGE, SENIOR ORTHOPEDIC SURGEON TO THE PHILADELPHIA GENERAL HOSPITAL.

READ MAY 24, 1905.

Psoas abscess should be considered as a condition requiring diagnostic skill independent of that necessary to the diagnosis of tuberculous caries of the spine, from which it must always have its origin. While generally considered, and properly so, one of the symptoms of tuberculous caries, it occurs very frequently in cases where there is no spinal deformity and is often detected years after the disease of the spine has subsided.

The statistics of Townsend (Trans. Am. Otho. Assn., vol. 4, p. 166, 1891) and Ketch (same vol., p. 200), and Dollinger (Whitman, Orthopedic Surgery, 2nd Edit., p. 105), show that abscess formation was detected in 21% of 1155 cases of spinal caries. Mohr, Nebel, Bouvier, and Lannelonge discovered abscess formation in 281 cases out of 354 autopsies performed upon those having suffered from Pott's disease (Whitman Orthopedic Surgery, p. 105). This, Whitman observes, amounts to nearly 80% and would indicate that a large percentage of abscesses are not recognized during the life of the individual, or else that only the very severe cases come to autopsy.

The very small amount of space given in text-books to the consideration of the symptoms and diagnosis of psoas abscess would lead one to infer that there was not likely to be any difficulty encountered in ascertaining the presence of a psoas abscess. In reality, experience teaches us that there is often very great difficulty in differentiating psoas abscess from a large number and varied conditions, among which may be mentioned femoral hernia, hematoma, sarcoma, perinephritic abscess, sacro-iliac and hip disease. The consideration of some of the difficult problems encountered in the diagnosis of these varied conditions is the object of this paper.

We are all prone to report our successes and leave in oblivion

those experiences which do not redound to our credit. Since we learn most from our failures, why should we not have the opportunity of learning from the failures of others. I shall omit the names of those physicians who were, or were said to have been connected with the cases to which I shall refer in this paper. I do this in justice to those physicians whose statements may have been misquoted by the patients.

In determining the presence or absence of psoas abscess it is necessary, first, to determine the condition of the spinal column, whether kyphosis is present, and its location. When kyphosis is present and is located between the mid-dorsal and last lumbar vertebrae, we may expect to find either unilateral or bilateral psoas abscess. In the absence of kyphosis, the presence of marked rigidity of the spine may indicate the existence of healed Pott's disease, which has gone on to recovery without sufficient destruction of the bodies of the vertebrae to produce a posterior angular curvature. So, too, rigidity of the spine may be the result of other conditions, as osteitis deformans, healed fractures of the spine, congenital anomalies and several other diseases. The presence, therefore, of such rigidity associated with a swelling in the region occupied by psoas abscess is not to be construed as certainly indicating that condition.

In psoas abscess the thigh early assumes a characteristic position. The thigh first becomes flexed on the abdomen and then adducted and rotated outwards. Differentiation from hip disease is made by ascertaining the character of attempted normal function. In psoas abscess the hip can be easily moved in all directions, excepting only such limitation of motion as is produced by contracture of the psoas muscles. The thigh can be easily flexed but cannot be extended. It can be adducted but cannot be abducted. It can be rotated inward but cannot be rotated outward. In hip disease the hip is equally fixed in all directions. While in the incipiency of hip disease the muscular tension around the joint makes equal resistance in all directions, when the hip becomes ankylosed as a result of the disease, the characteristic position and condition are not always maintained.

The employment of an anaesthetic is invariably reprehensible in the incipiency of hip disease, because the fixation of the joint is produced by muscular action only, and anesthesia removes this safeguarding, leaving the joint free for excessive motion and the traumatism therewith associated. In the diagnosis of ankylosed joints anaesthesia is of the greatest value if used prudently in determining the kind and extent of the ankylosis. In psoas abscess simulating hip disease anaesthesia will sometimes be of value in showing that the hip joint is entirely free. The possibility of anaethesia proving a source of error must not be overlooked. Often when it is found that the hip is free from involvement the physician is prone to overlook the real cause of trouble in the existing psoas abscess.

So common is the error of overlooking psoas abscess when the thigh is in the characteristic position produced by psoas contracture that too great stress cannot be placed on the importance of this sign. I am constantly seeing cases that have been kept in bed for months with Buck's extension applied with no symptom of hip disease present except the posture characteristic of psoas contracture. The normal action of the psoas muscle may be ascertained in a relaxed abdomen by placing the hand firmly upon the belly of that muscle and requesting the patient to flex the thigh. Normal contraction will be clearly perceptible to the hand, and by this means departures from normal action can be readily recognized. Since in psoas contracture the muscle is in a state of contraction, further flexion of the leg does not produce additional enlargement of that muscle. The contrast with the corresponding muscle will be a guide.

When a psoas abscess shows itself as a small tumor, just below Poupart's ligament, the superficial resemblance to a femoral hernia is very great. If, added to this, there is present impulse on coughing, there seems to be sufficient evidence of hernia to warrant the use of a truss. I have removed very many trusses from psoas abscesses and once, by invitation, witnessed a surgeon attempt a radical cure for femoral hernia upon a patient who had worn a truss for several years. To the astonishment of those who were present the incision through

the skin revealed a protruberance not at all resembling a hernial sac. The evacuation of a large amount of tuberculous pus, fibrous and bony detritus demonstrated the tuberculous character of the supposed hernia. Subsequent investigation showed mid-dorsal spinal rigidity and helped to determine the diagnosis of Pott's disease with psoas abscess, There is one point in the differentiation of psoas abscess from hernia that is invaluable, and I believe that Dr. J. T. Rugh of Philadelphia deserves the credit of establishing its importance. In psoas abscess the accumulated mass can be distinctly felt above Poupart's ligament. and fluctuation detected by bimanual palpiation. It is also important to observe that in psoas abscess impulse on coughing while present in the upright position is not present in recumbency, because the tumor disappears by force of gravity unless the sac is very tense. In hernia impulse on coughing is present in the erect, and sometimes also in the recumbent position. In psoas abscess resembling hernia we again fall back upon the determination of the existence of a spinal condition as a further means of diagnosis. The presence of kyphosis sometimes leads us astray in assuming that a condition resembling a psoas abscess must be a psoas abscess because of the existence of a kyphosis.

A distinguished neurologist and myself were in consultation over a hysterical girl who had a mid-lumbar kyphosis. Suitable jackets were employed. After about a year the patient called attention to a mass in the right abdomen. The pronounced type of the hysterical manifestations and the gross exaggeration of every symptom caused us to place little reliance upon her statements until the appearance of the mass became conspicuous. Feeling sure that it could only be a psoas abscess, the real problem seemed to be the possibility of evacuation and whether the condition of the patient's nervous system was such as to withstand the operation. Another neurologist, and also one of America's most distinguished surgeons were called in. Both concurred in the diagnosis and the next day was set for the operation.

The patient had presented no temperature changes other than

those usually associated with tuberculous disease of bones. She was fairly well nourished. I made an incision through the skin on the right side of the abdomen just above the brim of the pelvis and quickly reached an enormous sac which did not present the usual appearance of a psoas abscess. A conference was held with the neurologist and surgeon, both of whom were present at the operation, and the determination reached to make an incision an inch in length in the sac. This was done and there exuded a mass of black blood clot. It was promptly agreed among us that this enormous hematoma must be removed and an effort made to control the hemorrhage into the sac. The incision was enlarged. More than a horse-bucket full of black blood clot was quickly removed from the sac which was the sac of the former psoas abscess. There was no evidence of fresh blood, and search for bleeding points failed to reveal any. In the search, however, we encountered caries of the lumbar vertebrae. The patient showed considerable shock and we determined to pack the cavity with sterile gauze. Ether was discontinued, strychnine given hypodermically, and oxygen inhalations given. The patient reacted fairly well and conversed rationally. The pulse and respirations improved steadily. The neurologist and the surgeon left the house, while I remained behind to collect my instruments. One hour after the patient was removed from the operating table she suddenly collapsed. Necropsy was not permitted.

It would be futile to attempt any excuse or explanation of this failure to recognize a hematoma of the vast size of this one. The belief was present in the minds of all that with the kyphosis, the associated symptoms of caries of the lumbar spine, that such a mass occupying the site usually occupied by a psoas abscess could be nothing else but a psoas abscess. None of those present had ever seen or heard of a similar case.

A boy 16 years of age presented a severe degree of anteroposterior angular deformity of the spine. Was active and robust. I had seen him when 8 years of age, and had recognized the presence of a psoas abscess at that time, which was not evacuated because it was already tending toward a spontaneous

cure. In six months it could be no longer detected. After this time I examined him about once a year, always watching for a reaccumulation, but this was never found. When the boy was 16 years of age the family physician informed me that he had detected a large mass in the right side of his abdomen. Temperature, 102°. The distance was such that I could not personally examine the boy, but I telephoned the family physician that I supposed the condition to be one of psoas abscess, with a reaccumulation in the old sac. Two weeks later the abscess was aspirated and an intensely foul smelling pus evacuated. This was subjected to a pathological examination and the colon bacillus found in large numbers. Subsequent to the aspiration free incisions were made to permit of drainage, but septicemia ensued and caused death in a few days. In this case the temperature was the only indication of the presence of an acute process, since this acute abscess filled the sheath of the psoas muscle just exactly as a cold abscess would have done. The symptoms and signs, excepting only the temperature, were exactly those of a typical psoas abscess. The boy had twice been ill with influenza, with a temperature at times running to 104°, and the recent elevation of temperature was thought to be an indication of another attack of la grippe. My statement, that the mass in the abdomen was in all probability a psoas abscess, influenced those in charge of the case to postpone evacuation.

The temperature possesses real diagnostic value in connection with psoas abscess, but the diagnosis must rest upon the symptom complex and not upon any particular symptom. There are oftimes coincidental diseases that in themselves give rise to elevations of temperature and this may cause confusion in the diagnosis.

I have seen many patients having more or less kyphosis, in some of whom there have been tuberculous abscess accumulations developing coincidently with inflammatory diseases. In some cases the abscesses had been previously evacuated and in others spontaneous absorption had taken place. With the early development of pneumonia, scarlet fever, diphtheria,

etc., and the first thought has invariably been that there was some involvement depending upon the spinal caries with the development of abscess accumulation. Only after the symptoms of the inflammatory disease became pronounced was it possible to make a differentiation.

A man of 45, with a rigid lower dorsal spine, had typical girdle pains and localized pain in the region of his right kidney. There was an evening rise of temperature to 103° and 104°. The abdomen was very tense. The hips moved freely with apparently normal voluntary control. Three surgeons and I decided that the temperature contraindicated the presence of psoas abscess, and that there was probably an acute abscess in the region of the right kidney. It was determined to anaesthetize the patient for a more satisfactory examination of the abdomen than was possible in its rigid state. Under profound anesthesia the abdomen was completely relaxed, permitting of free palpation of the spine, kidneys and abdominal organs. No abnormalities could be detected by any of us. The day following our clinical study under anaesthia the temperature rose to 104°. Preliminary examination made before the administration of the anaesthetic had shown some involvement of the lungs. Later, a critical study was made and phthisical cavities discovered in both apices. The pain in the right kidney region continuing, it was decided to make an exploratory incision with the result that a large psoas abscess was evacuated.

It is impossible to give any satisfactory explanation of the failure to detect this large mass with the opportunity afforded to palpate a completely relaxed abdomen. The presence of distinct dorsal ankylosis without angular curvature, the presence of phthisical cavities in the lungs, the absence of the leg symptoms usually associated with psoas abscess, produced a group of symptoms that was confusing.

A child 2 years of age was noticed to limp. Rheumatism was ascribed as the cause. The supposed rheumatism did not get better, and after one month a diagnosis of hip joint disease was made. A surgeon examined the child and stated that he could find nothing wrong with the hip. The child suffered in-

tense pain around the right hip, which was kept flexed and rigid. No attempt was made to walk at the end of another month. Another physician was consulted who kept the child in bed with no improvement whatever. Under ether both hips were found to be perfectly free. Five months after the onset of the disease I saw the child, who was much emaciated. Any movement of the right leg was severely painful. The thigh was flexed, adducted and rotated externally in the typical position produced by psoas contracture. The lower spine was rigid, the abdomen tense and the superficial vessels just above Poupart's ligament were engorged. Even in recumbency the abdomen was too tense to permit of palpation. Pain seemed to be severe. Anaesthesia by bromide of ethyl produced complete relaxation of the abdomen, and a large mass was detected filling the right side of the pelvis and extending upward like a narrow band alongside of the spine. After catheterization of the bladder the mass could be distinctly felt in all its contour. It seemed to be soft, but fluctuation was doubtful. The surgeon who had studied the case three months previously was fortunately present, and we agreed that it presented all the characteristics of a psoas abscess, with the exception of the engorgement of the superficial veins in the lower abdomen, which did not, of course, accord with such a condition. It was decided to make an exploratory incision, and this was done two days later in the presence of the members of the surgical staff of the hospital. An incision two inches in length was made parallel with and just above Poupart's ligament. The mass was quickly reached, and since its superficial aspect did not resemble that of a psoas abscess, a trocar was introduced. A thick gummy substance and some blood clot were removed, showing the mass to be sarcomatous. The incision was closed without further interference. Pathological examination of material removed by trocar demonstrated the growth to be a round cell sarcoma.

I have notes of a case occurring in a man of sedentary occupation who went to a dispensary on account of a swelling on the right outside of his right ankle. This was found to be a

cold abscess about the size of an orange. Under ether an incision was made and about three pints of tuberculous pus removed. So large an amount coming from a tumor of this size caused further investigation to be made. A long probe was inserted and readily passed upwards until the point was felt in the popliteal space, where another incision was made. The probe was again inserted, passing upward as before, until the point was felt just above Poupart's ligament, where a third incision was made, demonstrating the presence of a psoas abscess that had pointed at the ankle. In this case there was no angular deformity of the spine, but there was rigidity of the entire dorsal vertebrae. It is not difficult to trace anatomically the course of this psoas abscess, ever seeking the points of least resistance. Assisted by gravity it took a downward course until its progress was arrested with the consequent bulging at the external malleolus. There was a history of hernia that was said to have been cured by the wearing of a truss. This supposed hernia was doubtless a psoas abscess bulging out just below Poupart's ligament, and the supposed cure was due to the gravitation of the mass down through the thigh with the disappearance of the bulging.

Dr. Joseph M. Spellisy, in delivering the annual address before the Philadelphia Academy of Surgery in 1903, spoke of "Abscesses in the Right Iliac Region, and other Lesions not of Gynecologic or Appendiceal Origin Mistaken for Appendicitis." He cites three cases where such mistakes were made. One was a psoas abscess without spinal deformity. One was an abscess arising from a sacroiliac joint. One was purulent osteitis of the hip joint, with perforation of the acetabulum. In all three of these cases the diagnosis before operation was appendicitis, for the relief of which the operation was performed. The appendix was found to be normal and the corrected diagnosis made.

The Philadelphia Obstetrical Society devoted the meeting of November 7, 1902, to a symposium on pus in the female pelvis. I was assigned the subject of "Pus in the Pelvis as a Result of Bone or Joint Necrosis: Diagnosis and Treatment." (Amer-

ican Medicine, December 6, 1902, p. 887.) I emphasized the following points as a part of my paper. "Abscess formation in Pott's disease not infrequently exists for years after the original bone lesion has healed and not infrequently when there is no spinal deformity to direct attention to the site of its previous invasion. A psoas or lumbar abscess has no well-defined direction of advance, but its vagaries cause it to be confused with other conditions. Reliance must be placed upon the evidence of the old bone disease. In the absence of well-marked angular kyphosis, or of a slight angular curvature, faulty mechanical function of the spine will be observed, due to bony ankylosis of two or more vertebrae. Often the most careful analysis will fail to detect such ankylosis in those cases in which a perfect recovery has taken place."

The possible medico-legal aspect of such errors in diagnosis as I have cited in this paper was made the subject of an address before the Medico-Legal Society of Philadelphia, April 30, 1901, the title of which was "A Medico-Legal Aspect of Tuberculous Joint Disease." (American Medicine July, 1901.) I then stated that "Courts of justice have many times repeated the decision that a physician could not be held responsible for unsatisfactory results where it was proven that the said physician had done the best he could. It was not necessary that he should do the best that any one could do." A large number of court decisions were quoted from "The Law in its Relation to Physicians," by Arthur N. Taylor.

More than enough instances have been cited to show that the diagnosis of psoas abscess is not always easy, and that each case is worthy of the most careful study in every phase presented. The presence of well-marked evidence of spinal caries is sometimes misleading. Great spinal deformity is often present long after the activity of the bone disease has subsided. When conditions more or less closely resembling psoas abscess are also present, the preponderance of evidence is often in favor of psoas abscess when in reality some other disease or condition is present. The knowledge that these errors in diagnosis have occurred under the most critical inspection and elaborate study

is convincing that while they are not always avoidable they should be guarded against as far as possible.

I append a list of conditions that may so closely resemble psoas abscess as to be mistaken for it. This list, made up from my personal experience, can doubtless be extended from the experiences of others.

Tuberculous hip disease.
Hematoma in the abdomen.
Sarcoma of the pelvis.
Abscesses due to the colon bacillus.
Perinephritic abscess.
Appendiceal abscess.
Ovarian and tubal disease.
Hernia.
Tuberculous disease of the bladder.
Enlarged glands of the groin.
Hysterical affections.

MASTOID ABSCESS.

BY DR. ERNEST U. BUCKMAN, WILKES-BARRE, PA.

READ JUNE 21, 1905.

This subject has been presented to this Society in former years, but not so recently that it may not be discussed with some interest at this time. It is not my purpose to present anything new, but merely to emphasize some important features of the disease that have come under my personal observation in the past six years. During this time I have operated upon thirty-two cases, and have assisted Dr. Taylor in many others. The complications that have arisen, make me look upon mastoid abscess as a very grave disease, and I regard the operation as a serious and difficult one. In my thirty-two cases I have had two deaths, and two cases in which I have been associated with Dr. Taylor have had fatal a termination.

In a series of over two hundred cases occurring in one of the large ear clinics in New York, the mortality was a fraction more than 7%.

When we recall the fact that the operation was practically unknown until 1873, and was not very generally performed ten years ago, though the disease must have been prevalent for centuries, we are appalled at the amount of suffering that could have been relieved, and the number of deaths that might have been prevented.

The human race is indebted to modern surgery for many blessings, and the present method of treating mastoid abscess is not one of the least of these.

To illustrate, permit me to quote in full the first published account of mastoid operation that I have been able to find. The case was treated in 1776 by a Prussian military surgeon, Jasser, and his account is as follows: "A soldier by the name of Hittberg was sent here as a recruit when the regiment was made up from the Apenberg Dragoon Regiment. At the inspection of recruits he reported that he had had a pain in his ear for many years, and that pus constantly came from the ears; that he had lost the hearing in the left ear entirely, and that he was

very hard of hearing in the right ear. I asked him whether he had been otherwise always in good health, and his answer was that he had, until about four years ago, when he had had some ulcers on the right foot, which had healed, and since they had healed he remembered well the pain had come on in his ears and the discharge of pus commenced. I examined his ears and found very offensive pus coming from the same. The commander of the regiment, who was present at this inspection, lifted his cane and assured the recruit that this was the true remedy to restore his lost hearing, and to bring the pus from his ear. As this new remedy was suggested I could not think of declaring the patient an invalid. He received his uniform and had to start to practice.

"After three weeks this man was brought to me at the hospital. He had high fever and complained of severe pain in his right ear. The pain in the left ear was bearable since the hearing was gone. Very little pus came from the ear. I had a venesection performed. The blood had an inflammation skin. I had softening poultices applied over the ear, and injected into the ear milk in which althaea root was boiled The pain and rise of temperature persisted; the following day venesection was repeated, and for internal use he had a tempering potion, and mildly irritating enemeta were given. As the pain still persisted, although the fever diminished, on the seventh day vesicants were applied behind the ear and in the region of the neck. As I had at this time some 300 patients in the regiment, and my surgeon's mates were mostly sick themselves, I could not treat this patient as his condition demanded. The external remedies could not be applied properly because there were too many patients and too few surgeons' mates. As the patient was free from fever, I sent him back to the company. I have frequently had this patient since under my care for the same attacks. As his affliction was of such long standing I let him return to the company each time as soon as he was free from fever. He complained always that the hearing of the right ear continually grew worse, but he was a soldier and a soldier he must remain. The man was worthy of all sympathy because

he was frequently punished for not hearing the orders of his commanding officer. This man was put in the same category as the Poles who did not understand the German language, and who therefore might as well be regarded as deaf. Many recruits from Poland were sent to the regiment. In the year 1776 he was again sent to me at the hospital. This time he had high fever and the pain was so severe that the patient was delirious. Within two days I had two venesections made. I gave mild cathartics and applied to the ear softening injections, also steam baths, and applied behind the ear vesicants and leeches. All these remedies were applied one after the other and partly repeated, but without giving the patient even the least relief from pain. He walked the floor day and night, and I was obliged once in awhile to give him a dose of opium to induce sleep for a few hours. The pus from the ear was so profuse that it ran down the side of his neck, and had an offensive smell. When I pressed on the outer opening of the ear (the violent pain was in the right ear only) there came forth a thick granular pus. In the course of three weeks it appeared as if there must be some deposit behind the ear on the mastoid process. Up to this time I had always put vesicants on this part. There was a small prominence and I thought I could detect by touch a fluid. I now put softening poultices on the part and the next day the small prominence had disappeared, and I could not detect any fluid by touch, as I had done previously. I changed from the softening poultices to irritating remedies again, and put on the Basilicon ointment, which was mixed with Spanish fly powder. There was again a prominence and the supposed fluid. The fever was at this time high, increasing and diminishing with the pain. It was impossible to keep him in bed,—most of the time, day and night, he walked the floor, and frequently the pain was so great that he tore his clothing. I took the bistoury, and made in this region an incision one inch long, down to the bone. Out of this opening there came a few drops of very thin and sharp pus, and yet I could not detect anything else by probing. Afterwards I again had softening poultices applied to the wound. I hoped that the patient

would now experience relief from his pain, but it remained just the same. On changing the dressing I found a black spot on the charpie. This attracted my attention because I supposed that there would be an osteomyelitis under the tendon of the sterno-cleido-mastoid muscle under the mastoid process of the temporal bone, but as I could not detect anything by the probe I took the bistoury and denuded the mastoid process more from the tendon and the periostium. At last I found the whole surface of it quite rough and bare of pericranium. I went with a probe over the surface of this bone till I entered into an opening in the bone. As I pressed deeper the probe remained fastened in the cells of this process so that I had to take pains to get it out again. At this moment I had the most formidable idea of the result of the outcome of this disease. Osteomyelitis was present. If this went into the cells of the mastoid process, with what remedy could I conquer it? Also it was possible that the osteomyelitis might attack the inner surface of the bone, and with the deepest sorrow, in my thoughts, I saw this patient suffer a slow death. I asked for a syringe, and as I had nothing else at my disposal I took an infusion of 'breast tea' and injected it, luke warm, into the opening. The tube of the syringe filled this opening so exactly that it fitted like a wedge. None of the fluid came from the outer wound. When I paid attention to the outer opening of the ear the patient bent his head to the left side, as one draws away in the fear of a prick. Suddenly he exclaimed 'My God, what is going on! Something is running through my ear into my head.' He then began to snuffle and the injected fluid ran out of the right nostril. I was frightened myself at this event, but in order to be sure of the same, I repeated the syringing more frequently. At the same time pus came freely from the outer opening of the ear, but I could not detect whether any of the injection fluid was mingled with it. The patient had a pleasant expression on his face. I asked him how he felt, and he answered, 'God be eternally thanked, I find that the pain in my ear is less.' I put a dry dressing on the wound, the patient went quietly to bed and slept without interruption for ten whole hours. He had laid on his

right side and very little pus came from the outer opening. I treated the patient again in the evening and injected the same fluid. As he had been so well that day, I purposely did not change the fluid. I asked the patient how he was, and he answered with joy that the pain had almost entirely disappeared, except that at times he had sharp, shooting pains in the ear. The discharge of pus from the outer ear became less every day, the color of it improved as did the offensive smell. In a week or eight days the pain and the discharge had stopped entirely. I discontinued the syringing and simply dressed the wound with dry charpie. For some time the bone could still be felt to be bare, but as there was no pus coming from the opening, I drew it together. After three weeks the wound had totally closed.

"I confess my ignorance in this case, as I could not explain the course which the injection fluid took through the bone. I knew that the cells of the mastoid process of the temporal bone are in connection with the hearing, but how this connection with the eustachian tube was, I heard nothing of in the lectures on osteology and physiology."

Here follows an account of a series of observations made on dry skulls and fresh ones to demonstrate the anatomical relations of the mastoid cells and the eustachian tube. In conclusion the author says: "The patient since this time has always been healthy and the pain in the ear never returned."

The operation was again performed by Weber of Hammelburg, in 1824, but was not re-established until 1873, when, to again quote from Dr. Amburg of Detroit, from whose paper the foregoing account is taken, "Schwartze declared war against the all-powerful opposition, and carried the field."

Mastoid abscess follows middle ear inflammation, but so far as I am informed, it is not known just why all such cases do not give rise to this condition. A knowledge of the anatomical structure of the ear leads to the belief that the mastoid cells are more or less affected in all middle-ear inflammations, yet abscess formation occurs in comparatively few.

The symptoms of mastoid abscess are well known, but the diagnosis is not always easy except in typical cases. The

typical cases are by far the most grave, and frequently in these a delay in operation of twenty-four or forty-eight hours, may cause the death of the patient. In two fatal cases that came under my observation recently, the diagnosis was by no means certain, and was established only by opening the mastoid, and after meningitis had developed. It is not certain that an earlier operation would have been of any avail, but it would have been justifiable and might have been successful.

Where there is definite swelling and tenderness over the mastoid process, with or without pain, following a middle-ear abscess, I never wait more than twenty-four or forty-eight hours, without urging operation. If there is intense pain with symptoms of meningeal involvement, I would urge operation at once, even though there is no other indication that the mastoid is affected. Dench says, "I would rather see a doubtful mastoid from the inside."

There is only one safe rule to follow. An exploratory operation is always safe. I never regretted opening a mastoid but once. In this case there was some swelling, high fever, and intense pain. I found a perfectly healthy mastoid, and on the second or third day after, erysipelas developed on the opposite side. Fortunately the wound did not become infected, and the patient made a good recovery.

Where there is a thick outer wall to the mastoid cells, the external symptoms frequently do not appear. In such cases, the inner wall is generally thin, and the diseased process follows the line of least resistance, and brain involvement is extremely likely to follow delay. These are the grave cases. The diagnosis is usually uncertain and the operation is difficult. All of the fatal cases that I have known have been of this character.

The only question to consider is that of diagnosis. After this is made there is but one treatment. Abortive and palliative measures are useless, as the foregoing quoted case showed one hundred and thirty years ago. A case may occasionally subside and remain latent for a longer or shorter period, but operation will eventually be necessary.

Mastoid abscess has been called "Appendicitis of aural surgery." Its resemblance to appendicitis is identical, and it should be dealt with in precisely the same way. Early diagnosis and early operation are as important in one as in the other.

MENOPAUSE; CHANGE OF LIFE, CRITICAL PERIOD, GRAND CLIMACTERIC. THE END OF MENSTRUAL LIFE.

BY DR. G. R. ANDREAS, WILKES-BARRE, PA.

READ SEPTEMBER 7, 1905.

Although not a disease, yet there are symptoms peculiar to this change of life and a short study of the causes, nature, and treatment of these symptoms may interest some of you. The function of menstruation is entirely under control of the sympathetic nervous system.

Normally, there is a marked regularity of conditions taking place in the genital organs of women, and when this cycle is broken no wonder that often peculiar physical and psychical disturbances present themselves.

The frequent ovariectomies of late years have given us a great deal of information, as to how many of these disorders are directly due to the menopause.

"The disorders of the menopause, *per se*, are really only those which are in some way connected with the cessation of menstruation, and they are comparatively few and simple; while the disorders and symptoms occurring at the period of the grand climacteric are many, and various and often severe."

We will consider the natural rather than the artificial menopause.

The age at which change of life takes place varies greatly, but more than half of women cease to menstruate between the ages of forty-five and fifty years. It occurs sooner in the lower than in the higher classes of society; in the negro before the white race; in cold before warm climates. If puberty is early the menopause will be late and vice versa.

"When we consider the profound changes in skin, hair, crystalline lens, Peyer's patches, etc., at this time of life, we are prepared to admit that the ovaries and uterus may be undergoing changes." The ovaries atrophy, and there is an increase of fibrous connective tissue. In those cases in which the menopause occurs early in life, hard, sub-peritoneal fibroids have been found. Hyaline degeneration of the arteries, and fatty degeneration, are conditions which probably come at a more advanced age. The uterus is enlarged for a time, but soon undergoes atrophic changes. The walls become thinner and there is a shortening (one-half inch). Especially is there a shortening of the cervix, and often obliteration of the internal os.

These organs may atrophy at the same time, but more often the uterus atrophies later than the ovaries.

There are clinical signs which intimate which of these organs atrophies first, but these we will consider later.

There is some atrophy of the hypogastric plexus.

Some have tried to explain that the neuroses, etc., are due to an auto intoxication. If the menses are a means of ridding the system of toxines, then, indeed, this reasoning seems logical.

The many ailments which attack the pregnant women, also may favor this argument. The profession accepts that many of the ailments accompanying pregnancy are due to auto intoxication, and the cessation of menstruation at this time may be responsible to some degree. A lack of ovarian juices, is mentioned as a cause. Further experiments with the animal extracts may help to solve this point. Both theories need further investigation to establish facts.

A cause for the nervous depression, is the woman's consciousness of her condition. She knows that her child-bearing period is over, that her form will change, and beauty fade. She realizes that she is getting old.

Symptoms:—Cushing divides them into two general classes, *i. e.*:

"1. Disorders of circulation—
Flashes of heat; hemorrhages.

"2. Disorders of the nervous system hystero-neuroses—
Palpitation; psychical disturbances.

"Besides these," he says, "it is necessary to recognize a third:

"3. Complications, or disorders incident to the period of life during which the menopause occurs."

Flashes of heat running over the face, neck and sometimes body, is one of the symptoms we meet.

"The heat is a subjective sensation and not real."

"The sensation is caused by a temporary vaso-motor paralysis, which permits the extreme dilatation of the small blood vessels."

There is a burning, tinkling sensation and a high color, followed in a few minutes by a free and distressing sweat. A woman told me that she could hear a hissing sound as the blood was rushing through the carotids at the time of these flashes. This case also had violent palpitation.

This phenomenon may be present in either the natural or artifical menopause, indeed it is very marked and more troublesome in the latter. About one out of ten women will be annoyed by these flashes.

Hemorrhages. "Metrorrhagia has no place among the normal phenomena of the menopause. Hemorrhage from the womb at this time is often caused by endometritis, cancer, etc., but it is not an incident pertaining to the menopause." These are the words of one author, yet probably each one of you has seen cases in which there was profuse hemorrhage, which must have been due to some vaso-motor disturbance and to none of the above-named diseases.

No one, however, will gainsay the great necessity to examine carefully for cancer in these cases.

Vicarious hemorrhages may complicate this period.

Although both symptoms, flashes and hemorrhages, are classed as disorders of circulation, yet they are directly due to a nervous phenomenon.

Disorders of the nervous system.

Tachycardia is the symptom we meet most frequently in change of life. It is one of the first symptoms and is most severe in those that change early in life.

It has nothing that is in itself especially peculiar, only that we find it in women at this period, who never had the trouble before, and where there is no organic heart lesion.

Reed says, "Many alert practitioners have worked through a lifetime without seeing the alleged diarrhoea of the change of life."

The writer treated a case, Mrs. D. F., age 48 years. The mother of three children. Family history good, excepting that one brother died of tuberculosis. She is well-built, weighs about 140 pounds, and up to January, 1904, enjoyed good health. At this time she came for treatment, stating that for some time her menses were very scant, that she was very nervous, and had a peculiar diarrhoea. This diarrhoea started regularly at 4 A. M., and from then until 10 A. M. she would have about four very loose movements, when it would stop until the next morning. The symptoms, besides the diarrhoea and menses, were those of a neurasthenic. Nerve sedatives did more to check this diarrhoea than bismuth, tannopin and kino. The condition lasted for over three months. The psychical disturbances and neuroses, although they give us the greatest trouble, we will not consider at this time, for they do not differ from those that we meet at other periods of life and they are so numerous that one paper could not do them justice.

"When the function of the ovaries ceases too suddenly for the uterus, or when, owing to congestion, endometritis, small fibroids, polypi, etc., the uterus can not undergo involution concurrently with the ovaries flashes and hemorrhages follow, complicated with the general train of symptoms witnessed after surgical removal of the ovaries. When, on the other hand, the uterus tends to cease its function sooner than the ovaries, stimulation originating from the latter to continue menstruation, gives rise to a set of symptoms similar to those

witnessed in cases of hyper-involution of the uterus after childbirth, prolonged lactation or exhausting diseases."

The duration of this change of life is from eighteen months to three years.

Treatment.—The management of these cases requires skill and perseverance. The diagnosis of the complications is often difficult.

The trouble is of long duration and the patient often is shaken in her confidence and it is a matter of no small concern, for a physician with a limited practice, to lose one of these cases, after having served the family, perhaps for years.

The menopause does not need treatment as a rule, but some of the complications do.

The hot flashes show a vaso-motor disturbance and must be treated from that standpoint, if treated at all. Veratrum viride is lauded. Cimicifuga often has a favorable influence.

Bleeding, in robust patients, does good and the effect lasts for months. The so-called "bleeding through the bowel," by means of the salines, does not have the same good effect. The bromides give good results in many cases.

If there is no endometritis, retroversion, etc., the treatment of uterine hemorrhage is about the same as the foregoing, with the addition of ergot, but if one of these conditions exists, treat as at other times.

Tachycardia, as a rule, requires no treatment. The psychical disturbances require no little attention. Some need sedatives, others stimulants and tonics. With those that are not overworked, try and keep the mind employed, travel, change of scene, or an interest in some special line of work, may tide them over this critical period. The over-worked need rest.

One may need an abundance of good food, another a restricted diet, especially of the hydro-carbons, to prevent excessive fat.

"Mere drug therapy can avail little for those that are overworked, or for those who have no occupation."

Be frank, and tell your patient that the trouble will last for

months, but that these symptoms will gradually disappear. Encouragement often does more good than medicine.

With the advent of animal therapy much was expected from ovarian extract, but with few exceptions, little or no success has been reported.

Krusen reports that he has tried it in three classes of cases. 1st, in amenorrhea and dysmenorrhea. 2nd, for symptoms following the removal of the uterine appendages. 3rd, for disturbances due to the natural menopause. Most cases are disappointing, but an occasional success incites to renewed use. The best results are noticed in the 2nd class of cases.

CIRCUMCISION.

BY DR. JAMES W. GEIST, WILKES-BARRE, PA.

READ SEPTEMBER 20, 1905.

Whether Jew or Gentile, Christian or Heathen, the physician, as the years go by, is bound less and less by precedent, by authority, by the orthodox, by the book.

By universal consent, he is given the right of appeal to his own reason, to his own knowledge and that of his co-workers, and without doing violence to religious beliefs, we may investigate and attempt to improve upon what has been taught as a covenant between God and Abraham. Such privileges our profession has earned by its many gifts to humanity of life-comforting and life-saving, sanitary, surgical and medical measures.

Six, nine or more thousand years ago, before scriptural history began, in the age of legends, myths and fables, the human foreskin in all probability was born, developed and matured much in the same manner as it is to-day. In the infant there was the same anatomical narrowness of its orifice with a tendency of the mucoid reflection to adhere to the glans and to retain the accumulating smegma, which in some cases certainly caused then, as it sometimes does now, considerable trouble. Among a certain proportion of youths and adults where it re-

tained its long and narrow infantile form, filth and venereal diseases were noticed to be more common and more lasting. Hence, to some master minds among all ancient peoples occurred this thought: if the narrow, muco-dermal ring is so apt to cause trouble, both during childhood and maturity, why not cut it off.

In this way may have originated that little operation of prevention or primitive mutilation, if you please, known as circumcision.

Did the Jews originate it and teach it to their neighbors, the Egyptians and Arabians, or did they borrow the idea from their taskmasters during the captivity? There is considerable evidence favoring the latter possibility, such as the picture writings on the monuments of Rameses II, and that of mummies of a still more ancient period.

In America it was found among the Teamas and Manaos on the Amazon, as well as among the Aztecs and Totomacs of Mexico.

At the present time it is practiced from China to the Cape of Good Hope, by Mussulmans and Arabians, by Egyptians and Kaffirs, by Ethiopians and Koptans, by the Christians of Abyssinia and the Christian Israelites of Scotland.

Dr. Morgan says: "Many causes led each and every nation independently to adopt this remarkable custom. And it does not follow as a fact because circumcision is mentioned in the Old Testament that the Jews were the first to perform this rite and operation of other races."

Besides the hygienic theory, the theistic, making it an indirect product of the priest-craft, strongly appeals to all of us in our attempt to solve the mystery of its origin.

In the words of one of the best writers taking this view: "There can scarcely be a shadow of doubt that circumcision was invented as a compromise between the old blood-thirsty divinities and men, and introduced by some ingenious and tender father in order to save the life of his child, as a substitute for human sacrifices, a bloody piety once practiced in extenso by countless Oriental tribes, and as even at a comparatively later period among the different tribes of Israel in

Palestine, as is shown by the story in Genesis of Abraham's intention to sacrifice his own son to his God. And the prepuce was chosen as the holy substitute, from its representing the most important part of the male body, the member of reproduction, while being at the same time dispensable."

What wonder, therefore, that circumcision should have been gladly adopted by so many tribes and nations and that it should have been at the same time tinted with a religious hue, to be looked upon as a covenant between the invisible omnipotent supreme powers and their human worshipers. A similar sacrifice to the "Great Spirit" was offered, as told by Catlin in his work on the Indians of North America, by every boy of many tribes when declared major. But unfortunately, for the red-skinned pious brethren, they were less gifted with that firey poetical, ingeniously inventive power, which heaven lavished on the restless children of the sunny Orient, and were foolish enough to pay their tribute of love to, and the fear of God, with one or two fingers, instead of one-quarter of an inch of dispensable prepuce.

Again, in his resume, he says: "Circumcision was called into existence by the divine power of man's inventive genius in ages unknown, far beyond the reach of human history and probably for no other reason but to save the innocent babe's life from the blood-reeking blade of demon-like priests and to appease at the same time the fury of ungodly gods that were supposed to thrive on human flesh and blood."

It was long after its origin—perhaps during the nomadic migratory epoch—adopted by countless tribes and races in all parts of the world as a child of their own.

The biblical poet even ascribed its paternity to the Hebrew patriarch Abram and the Jews selected it as their national emblem. From the very nature of its origin, circumcision had lost its purpose thousands of years ago and become superfluous when man's conception of theism became more human, and the institution of human sacrifice was recognized as ungodly. Yet during its long existence, it proved to be of great value to those who practiced it and to offer advantages of

which its inventor certainly never dreamed, the most important of which is beyond doubt, its tendency to promote cleanliness. For this very reason, numerous nations, with blissful ignorance as to the motive of the operation's origin on the one hand and the human innate instinct to all that is useful on the other, perpetuated it. And circumcision is still performed to this very day by man civilized as well as barbarous."

The prepuce is the envelope, capsule or natural covering of the infantile glans which, during the stone or cave-dwelling age of man, or perhaps in our still more remote ancestors, Darwin's tree-dwellers, formed a very necessary protection to the delicate organ of the pre-historic boy, as he clambered over rough rocks, or slid down the banisters of big trees.

It consists of a fold or reflection of the integument, whose outer or dermal layer is separated by a very loose connective tissue from the inner or mucoid layer.

The junction of these, forms the preputial orifice or end of the foreskin, which is generally the narrowest part. At birth it is usually longer than the penis and its opening narrow, preventing exposure of the glans, so that a greater or less degree of congenital phimosis is the rule.

The inner surface of the prepuce at this time embraces the glands tightly, especially at the corona where we generally find a ridge of adhesions. Sometimes the prepuce is adherent to a much greater extent, either in little patches at various parts of the glans or from the corona completely to the meatus. These adhesions are usually very light, more of the nature of agglutinations than firmly organized tissue and are easily broken up. But still they are apt to be, and often are, a source of local irritation and cause retention of the secretion of the glands of Tyson, which sometimes become the so-called preputial calculi.

Anatomists assign no function to this appendage, save that of a cover or sheath, which before the days of fig leaves, when man still lived in a state close to that of the animal, may have been very necessary to protect the sensitive glans from the sting of insects or the prick of thorny briars.

But like the vermiform appendix, with our present customs and habits or stage of evolution, it has really become a non-essential, a disease-trap that we might well be rid of. This seems to be the opinion of most syphilographers. Ricord says, "The prepuce is an appendage of the genital organs, the use of which, I never could divine; in place of being of use it leads to a great deal of inconvenience, and the Jews have done well in circumcising their children, as it renders them free from one of the ills of humanity. The prepuce is a superficial piece of skin and mucous membrane, which serves no other purpose than acting as a reservoir for the collection of dirt, particularly where individuals are inattentive to cleanliness."

Hutchinson says: "It would be difficult to contrive an appendage more likely to facilitate the implantation of the syphilitic virus than the prepuce."

Another says, "From a study of the question I conclude that the fore-skin is detrimental to health and that circumcision is a wise measure of hygiene;" and still another calls the prepuce an "outlaw of humanity" that ought to receive more attention from the medical fraternity.

Circumcision is the partial or complete amputation of the prepuce or foreskin. It is performed as a religious rite and as a prophylactic or therapeutic measure in congenital or acquired phimosis and other diseases of the prepuce and penis.

As a religious rite, being the oldest operation known, we naturally expect to find a definite literature with a fixed method of performing it. This, however, is not the case, as crudities still cling both to ritual and surgical circumcision. In one of the early scriptural accounts, as well as in the picture record on an Egyptian monument, we find a sharp stone was used. Many centuries later, a double-edged knife with a guide or shield of plate silver or ivory with a slit in it, to receive the prepuce is described. To-day the rabbi or mohel seizes the tip of the prepuce between the thumb and forefinger of one hand and with one or two strokes from below upwards, of a double-edged knife in the other, severs the constricted portion. The

natural elasticity of the skin carries it back behind the glans, while the mucoid layer remains in place. This is split or torn and pealed back with the thumb nails and brought in apposition with the skin edges. A small strip of styptic cotton, sterile gauze or linen, wet with cold water, forms the dressing, and in thirty-six to forty-eight hours, union is complete.

For nearly four score centuries, with slight modifications in the ceremony accompanying it, the Jewish people have performed this operation on the eighth day after the birth of each male child, and have found no legitimate objection to the custom. In fact, they are almost exempt from some of the discases which afflict other non-circumcising races, and apparently, during the last few years, the observing and thinking portion of the Gentile laity have been recognizing the benefits and physicians and surgeons are more frequently asked to do circumcision.

A father engaged me to circumcise his boy. I asked him why he wished it done. He replied, "Because I, myself, was a very sickly child until I was circumcised at eight years. I intend to spare my baby the possibilities from that source, and consider that no money I can ever spend for him will be as good an investment as this."

In the span of life from childhood to old age, over thirty local and systemic possible conditions are found indicating circumcision either as a cure or a prophylactic.

Upon the removal of the whole or part of the prepuce, the epithelial covering of the glans becomes dry and hard, less liable to excoriations and inflammations and less pervious to venereal viruses. The sensibility of the glans is diminished, but not sufficiently to interfere with the copulative function of the organ or to constitute an objection. The activity of the odoriferous glands of Tyson, situated on the corona, is diminished, favoring cleanliness; and the changed condition of the epithelium is a sufficient substitute for the prepuce as a protection.

Infantile circumcision, done carefully and correctly, certainly spares the child from local irritations and all their possible re-

flex effects, the youth from phimosis and paraphimosis, often from chancroid and the chancre with its sequelae syphilis, and the aged from epithelioma. This old operation is often badly and bunglingly done. The average writers of text-books consider it so simple as not to be worthy of mention, or if they do, it gets only a line or two, and most of us have to learn it in the usual way—by doing.

In the journals, innumerable methods of circumcision can be found, proving that no one way has yet been perfected. I confess that in my own cases I have done almost each one a little different from the preceding. I believe that, as in some other plastic work, it is a good plan to outline with a sharp knife the line of section intended in the skin, steadying the tip of the prepuce with two artery forceps, split with scissors to the outline and then complete each half with the scissors in the line already marked out. Don't be afraid of cutting the fraenum and especially if it is long, but be sure to restore it with your first stitch. Trim the mucoid layer short and the skin a little, more on top if still tight so as to allow it to move freely over the corona. Always in the adult, and whenever possible in the infant, remove a ring or strip of connective tissue at the bottom of the wound, dipping down into the sulci on each side of the fraenum. This prevents the indurated scar as well as the pouching around the fraenum. Place from four to eight or more stitches of catgut or horse hair and depend upon the blood and serum to seal the wound. I have used no dressing for several years, and as in hair-lip operations, I believe children do better without. Painting a little sterile sweet oil or castor oil over the raw edges protects against the first urine.

The phimosis forceps I do not like, and believe the usual operation can be done better with an ordinary dressing forceps or straight clamp. We should take hold of the tip of the prepuce, as the mohel does and cut behind the clamp instead of in front; having two points of support or resistance, we get the neatest cut. Of course the idea of the anterior cut is to make sure of the safety of the glans, but that there is really little danger of doing injury, is proven by the very rare mishaps in ritual circumcision.

I have seen stretching of tight foreskins, but it seems an unjustifiable torture that seldom gives permanent relief.

Dr. Palmer's operation of incision or spliting the upper surface well back on a grove director with a pair of scissors is supposed to act in the babe like a woodman's tree belting, hastening the normal evolution of the prepuce. I have done this twice, but cannot as yet say it is equal to a circumcision.

From several strong statements made, do not infer that I am in favor of indiscriminate circumcision. For surgery has not arrived at a stage where it clips off every apparently useless appendage.

I do mean to say that if we carefully examine all male infants on the eighth day or later I believe we will do more indicated circumcisions, or at least the Palmer incision.

In your cases of obscure symptoms in boy babies, always look to the prepuce and if you find the point of trouble here, cut it off.

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DISCUSSION.

DR. LONG.—I spoke of this subject in my President's address in 1899. We do this operation when the glans is covered and phimosis exists. It tends to prevent masturbation, chorea and other nervous troubles, balanitis, etc. As to the method, we all have our own. I cut off all the skin over the glans and strip off the mucous membrane. I then use interrupted or continuous suture. The rabbi may cut any way. It is made with one cut. He then peals back the mucous membrane with the fingernails. He does not suture it, but puts on some lint. The rabbi does the operation in thirty seconds and he gets better results than we do. As to the knife he uses, the knife must have no flaw on either of its blades. This is the only reason for a two-edged knife.

DR. BROOKS.—Dr. Long and Dr. Geist have covered the ground so well that there is nothing for me to say. One thing I must speak about. We should find universal circumcision like vaccination, and we would have the same objection. So all would not be circumcised, and we would find an occasional chancre and chancroid. The operation is sometimes done on diabetics. As to cutting off the dog ears, nature will take care of them.

DR. STEWART.—I have often found it necessary when a child is a year old to circumcise it, and I believe it should be done in every case. When older, the mother is worried to death over the ether and much alarmed. This could be avoided if it were done seven or eight days after birth. In these cases, I do not use stitches, except to stop bleeding, and I use a dry dressing. In older cases, I use interrupted sutures of chromacised gut, and leave the ends long. With these ends I tie on a strip of iodoform gauze.

DR. HOWELL.—I do not agree with Dr. Stewart, that it should be done in every case. I think it is uncalled for, when the foreskin can be stretched.

DR. GUTHRIE.—I agree with Dr. Howell. It is not necessary to take out all appendices, nor is it necessary to cut off all foreskins. I believe in circumcision, when indicated, and as to the Jewish method, they may have infection from the finger nails. I use a forceps and a straight bistoury. I transfix the foreskin, cut it off, then separate the layers, cut back the mucous membrane, and use interrupted sutures. I have a child I had circumcised, and applied boro-acetanilid. I found the child blue the next day.

DR. STEWARD.—If Dr. Guthrie would use compound sterate of zinc he would not have had his child poisoned.

DR. HOWELL.—I want to compliment Dr. Geist for his fine paper.

DR. STEWART.—I will venture to say that Dr. Guthrie and Dr. Howell do not examine one out of every nine or ten male children they deliver.

DR. GUTHRIE.—I do not believe in doing an operation unless there is indication for it.

DR. FAULDS.—For twenty years I do not believe I examined ten cases. For the last ten years I have paid more attention to these children. My opinion is, that few require circumcision. I do not believe that circumcision should be done on every child. I once circumcised an old man seventy-two years of age. He had been troubled for many years. I also circumcised a man of thirty years during the last year.

DR. ANDREAS.—I remember my professor of paediatrics said that he should never use a continuous suture in circumcision. I used it once and had trouble from the swelling.

THE MEDICAL SITUATION IN THE PHILIPPINES, PAST, PRESENT AND PROSPECTIVE.

BY DONALD G. MCCASKY, M. D., MANILA, P. I.
READ BY DR. W. W. LAZARUS, OCTOBER 4, 1905.

It is with a genuine deep feeling of pride that an American traveling through the Philippine Islands observes what an enormous factor in the development of the Philippines, since Dewey's arrival, the American medical man has been, by his scrupulous and energetic sanitary efforts. The entire islands have been included, and never before in all the Spanish regime did they receive such a house-cleaning, from top to bottom, as they are receiving now, and have been ever since the American occupation.

The greatest progress that surprises and confronts one at first is in the arrest and almost total eradication of bubonic plague, of which, in India, the inhabitants are dying like

flies, by the scores of thousands. Small-pox follows closely after plague, with a most encouraging outlook for its eventual absolute eradication.

In chatting with Dr. V. G. Heiser, the Commissioner of the Philippine Board of Health, and also chief of the U. S. Marine and Quarantine Service, the other day, he gave me some statistics which reveal a surprisingly healthy condition throughout the islands. Plague, variola, cholera, typhus fever, and leprosy were some of the diseases mentioned.

Since the beginning of 1905 there have been but 36 cases of plague located throughout the entire archipelago of 2,000 islands, and over 8,000,000 inhabitants. The average number of infected rats killed monthly has been above 20,000, and wherever a case is discovered, that infected locality is so thoroughly cleansed, sunlighted, fresh-aired, and the place fumigated or burned to the ground, and that the focus of infection has little chance to spread.

The commissioner is located in Manila with his eighteen American M. D. medical inspectors scattered throughout the islands, and his hundreds of native subinspectors help form the working machinery through which these preventative medicine measures are carried out.

Regarding small-pox, the record for the entire city of Manila, of 300,000 inhabitants, for the fiscal year of 1905, revealed but forty-nine cases, as against one hundred and one cases for the year of 1904 previous, as against several thousand of small-pox cases per annum during the Spanish occupation.

Though Manila is the center of the Philippine life, and used to be the very hotbed of disease as well as crime, it is the belief of Commissioner Heiser that the majority of small-pox cases do not occur in the city residents, but are found in those natives who come in from the provinces, and who have as yet not been reached by the vaccinating squads sent out through the country to vaccinate every inhabitant, every resident of Manila long ago being vaccinated.

Probably no better evidence could be offered that the $50,000, gold, expended annually for vaccination purposes

alone by the Philippine Commission is worthily spent than in this one example of variola preventative efforts.

Regular vaccine virus is made in the Manila laboratories, and is used by vaccinating squads, consisting of ten to twenty native employees of the Board of Health, under an American medical inspector, who goes through each province to all the towns, barrios and outlying districts vaccinating every inhabitant.

In the treatment of their plague cases, the Commissioner told me they used to inoculate every one living in the infected community with some of Shiga's prophylactic plague serum. By this measure they brought about a great reduction in the number of plague cases. It developed, however, during the course of the last few years that owing to lack of funds these prophylactic plague inoculations would have to be dropped. The most scrupulous hygienic precautions were observed meanwhile in every infected locality.

The reduction of plague continued more rapidly than ever, and the cause is attributed to the increased cleanliness rather than to the serum prophylactic measures employed.

At present all the serum used on the infected plague patients is a Japanese product from the Kitasato laboratory in Tokio.

Though Manila has been the battle-ground for plague, smallpox and the rest of the infections, especially prevalent in the Far East, she has also had confronting her the fact that she had no sewerage system, an obstacle of very gigantic proportions in influencing the health and disease of every town.

As in all other branches of medical endeavor, however, the American has risen to the occasion, and plans are now completed, bids are being advertised for, and within two years Manila will have its first sewer in all its unhealthy history. The sewer will be a gravity one, all the pipes sloping towards a district of the town called the "Tondo," where there is to be an enormous tank receiving the sewage. A pumping plant near this tank will force the sewage through pipes two miles out to sea, for Manila lies below the sea-level.

Next only in importance to the disposal of Manila's sewage,

is its water supply, and the plans for the improvement of this latter are of such obvious benefit that they need to be mentioned.

Heretofore Manila's water was piped seven miles from a river called the Maraquina. It was alive with amoeba, and the prevailing dysentery in Manila was lessened none in those who drank this water unboiled. The project now being executed is to secure water twenty miles above the present site of supply in a virgin and uninhabited region of land, owned by the government, who allows no one to dwell on it. This new water supply contains few amoeba, very few bacteria, and will descend to the city by gravity, 300 feet being the drop during its twenty-seven-mile course of pipe line. No necessity will be found for further water-pumping stations, as the entire city can be supplied by the force of gravity.

Recently, at their wits end to secure pure water, the Board of Health instituted a series of experiments on amoebic polluted waters with copper sulphate solution, 1 to 4,000,000. While the solution reduced the bacteria it did not affect the amoeba at this degree of solution, and it was only when employed in highly poisonous amounts to the drinking water that the amoeba were killed.

As unique as it gives promise of becoming effectual, is the leper colony being established on the Island of Culion, in the southern part of the archipelago. This leper island is being prepared for 5,000 inhabitants. Already there are quarters for 600 patients who are being taught to be self-supporting, and who raise farm products, cattle, learn trades and become experts in other directions of usefulness; all the benefit of their labor going to increase the wealth and happiness of this colony. It is planned to make this Culion leper colony self-supporting, and it will have its own municipality and the government of the latter will be according to the will of its leper inhabitants. This leper island is in charge of Medical Inspector Dr. de May, and is unique in the world's history, in that there never has been any other similar effort along such broad sanitary, political and humanitarian lines all combined together into one great medical movement.

Regarding typhus fever and cholera, there is little to be said, as the cases of the former during the entire year can be counted on the fingers of the one hand, and for cholera, there is nothing to be said except that it has not existed since April, 1904.

Pneumonia, typhoid fever, measles, diphtheria and this class of cases, so common in the American country, are very scarce in the Philippines, but malaria, in all its distinguished variety, is omnipresent throughout the archipelago, as is also dengue fever, though the latter is much more limited in its numbers and in the fatality of its ravages.

As strange as it is common, is the great number of otitis media cases occurring among the foreign element of the islands. Just what is the accountable cause explaining why this condition should develop and prevail among so many hundreds of apparently healthy foreigners, who remain in the islands for several weeks, is still puzzling the ear, eye, nose and throat medical people located in Manila and throughout the archipelago. The physicians at the Civil Hospital report the otitis media cases presenting themselves there to far exceed the proportions of affected individuals in the United States.

Just in passing it might be of interest to note that Manila already possesses five great hospitals, and that a sixth will soon be under construction. The most recent is the St. Paul institution, a magnificent roomy and attractive stone structure conducted by an order of French Sisters. The capacity of this hospital will be 300 when it is completed. At present only about 50 patients can be accommodated. Seventeen Sisters, two American trained nurses, two resident physicians and a staff of visiting physicians and surgeons constitute its present working complement.

Although not generally known, it has been proven by its practical results, that the United States Quarantine Service has been one of the most effective medical bodies of surveillance in the Orient. These officials not only board every vessel arriving and leaving the various ports of entry, discovering isolated cases of infectious diseases, and proceeding to imme-

diately enforce the rigid quarantine laws of the Philippine Archipelago, but through the coöperative efforts of the quarantine officers in other ports of the entire Orient, all vessels sailing for the Philippines are examined and any suspected or developed case of infection found amongst those on board is turned back, and not allowed to sail from the port of intended departure. Prophylaxis is the dominant note of all the United States quarantine officials' work, and in fact it is just such spirited prophylactic measures planned and carried out throughout the entire Philippine Islands since American occupation that has proven such a salvation to the Filipino, his American helper and to the various other nationalities dwelling in the islands. As an example, if a vessel wished to sail from a port, say Yokohama, Japan, for Iloilo, Panay Island, Philippines, she would be thoroughly fumigated, all her passengers examined, the steerage made to take a bath, and their clothes fumigated by steam, and every effort made to make the entire ship and everybody on it clean.

In the examination of the passengers, suppose a case of trachoma is discovered, and there are many such cases in the Far East among the Chinese and Japanese, the diseased case is turned back before the ship sails, and the Philippines reap this prophylactic reward. This holds good for variola, plague, typhus and all the other severe infections. The ship cannot sail until she has quarantine clearance papers.

Like the poor, and ever with the people of every community, the different localities of the Philippines have their numbers of public prostitutes, and it is in Manila that one of the most rigid and effective systems of sanitary care of these women exists. Statistics show Manila to have less syphilis than any other city in the world, where earnest, scientific care and records are kept. Out of its 400 public prostitutes under sanitary observation, there develops but one new case of syphilis per month among them. This fact speaks quite emphatically for itself as to the care given these unfortunates, and briefly the method observed as follows: All the public prostitutes are confined to one locality of Manila, the Sampadoc District. There is

no law about it except the law of common tacit, good judgment and consent. There is no licensing of assignation houses, though a license to sell drink is granted those who wish it. Two sets of records of every public woman in the district are kept. One is for the Bureau of Health, the other is kept by the police. The latter have a complete knowledge of the whereabouts of every woman. She may not leave her house without police permission. Pictures of every woman are kept, and knowledge is complete regarding her from the time she enters Manila as a public woman until her departure. The nationalities represented are Filipino, Japanese, French, Russian, American. The Health Bureau observations working conjointly with the police officials, consist of a weekly clinical and microscopical examination of every prostitute. Whenever a diseased case is met, she is immediately sent to the Sampadoc prostitute hospital, where she is treated. When all clinical evidence of disease has disappeared, a microscopical examination for the gonococci of Neisser is made. If found negative, the prostitute is examined microscopically again at the end of four days. If still a negative result is obtained, the woman is discharged. If however positive result is obtained, the woman is treated as usual for another ten days, when another microscopical examination is made, just as in the first case. The average time for the Manila prostitutes' confinement in the hospital is twenty-two days, the Japanese recovering more quickly than any other of the nationalities. The usual routine venereal irrigations are employed—hot potassium permanganate and formaldehyde hold first place now. Lysol used to be the so-called best. For chancroids, argentic nitrate is used, and for syphilis, potassium iodide and mercury. There are few complications. The hospital affords facilities for shower-bathing, it has modern American closets and every effort is directed to cleanliness. From twenty to forty diseased women is the average number of patients, the capacity of the house being about one hundred and fifty.

And now, near the end, just a word about the death dealers to the carabao, cattle, horses and the American mules. Rinder-

pest amongst the carabao and other Philippine cattle was ravaging the islands from one end to the other, and the animals were dying in great herds. Surra among the horses and mules killed these animals off without ever one of them being known to have recovered, and though the flagellated "trypanosomae evansii" isn't a vary curious looking animal as compared with all the varieties of the malarial plasmodia, yet it nevertheless "gets in its wicked work" to the extent that thousands of valuable American horses and mules die, to say nothing of the little Filipino horses. But the combativeness of the "Americano Medico" is telling for good in this fight, and though it is a veterinary one, it is the scientific medical knowledge and aggressive use of the same, by the Philippine Board of Health, that adds another encomium mark to its already well-deserved crown of laurels.

While looking over the medical situation of the Philippines, the past may not have been what it might have been in health, yet since the Americans have come to the islands and the red-blooded American medical man taken hold of his share of the work, things have grown decidedly, in some respects magically, better, and though the future for bettering the health of the residents of the Philippines is quite plainly not to be "one rosy dream of joy," yet healthy, bright skies are beginning to be seen through the fast breaking up dark clouds of ill health, which hung over the Philippine Islands like the fateful sword of Damocles. Bouvancy, good-spirited health opportunities will await the dweller in the Philippines more and more if the present health regime is adhered to and "hustled for," and backed up as it has been during the past few years of American occupation.

But just to get personal a moment, America for me, say I, and not the Philippines. There is only one "God's Country" and that is Uncle Sam's group of forty-eight states. There is just as important health work to do there for every physician as there is over here in the Philippines. Though it lacks the glamour, the distance this Philippine country surrounds itself with, nevertheless the fact remains the same, and every Amer-

ican physician deep down in his heart longs to get back to "God's Country," as soon as his duties will permit him, and to stay there and practice his profession. But then, the fates for many of the medical Philippine workers decree otherwise. They must "stand by their ship" for that is their call to duty, and it is to this small group of American medical men working here that gives such bright promise for the Philippine health future.

THE VOMITING OF PREGNANCY.

BY DR. JOHN A. PERSON, WILKES-BARRE, PA.
READ OCTOBER 18, 1905.

It has been estimated that about fifty per cent. of all pregnant women suffer more or less from vomiting. Nausea and vomiting of pregnancy may last only a day or two, or may exist during the entire term of gestation.

According to Giles, who has made a careful study of the subject, it is stated that vomiting may commence at any time after the first week to the end of pregnancy.

Seventy per cent. of all cases of nausea and vomiting begin in the first month, seldom in the second, third and fourth month, and almost never in the fifth and sixth month, and about from nine to ten per cent. in the last three months.

The greatest amount of sickness exists in the second and third months. The vomiting of pregnancy may be divided into two chief classes, namely:

Simple emesis, or nausea and vomiting; and hyperemesis, or pernicious vomiting.

Various theories have been advanced and a vast amount of literature has accumulated on this subject, which goes to prove that it is not due to a single aetiological factor. At one time, nausea and vomiting of pregnancy have been considered as an inevitable result from the irritation produced by the development of the pregnant uterus, and by others as a purely pathological phenomenon. The progress made in pathology gives us a good reason to believe that nausea and vomiting are not

a physiological but a pathological association of the pregnant condition.

Klein, Kaltenbach and others claim it to be a neurosis, which is allied more or less to hysteria; they base their belief upon the fact that its cure is frequently effected by suggestion and moral suasion.

It is doubtful whether or not this theory will explain the cause.

A certain physician once said: "If you are in doubt as to the cause of any disease, call it a neurosis, and this will cover a multitude of things we do not understand."

The etiology of vomiting of pregnancy, may be divided into two classes—predisposing and exciting.

The predisposing causes may be found in a congenital irritability of the nervous system, that produce exaggerated responses to normal reflex stimuli. The causes for this affection are anatomical lesions in the generative tract, notably congenital malformation of uterus, or dislocation of the pregnant womb.

The exciting causes are sudden shocks to the nervous system that exaggerate its reflex susceptibility.

An infective process producing hyperemia and irritability of the cerebro-spinal axis.

A pathological process which affects the constitution of the blood. Direct mechanical injury or violence to the pregnant womb, while straining or lifting in early pregnancy, may suddenly retrovert the womb.

Irritating poisons absorbed into the system, devitalizing the blood and irritating the nervous centers.

One of the most frequent exciting causes is the movement of the foetus in utero. Constipation and distention of the bladder are frequent causes.

The pathological anatomy is divided into two classes; first, those organs of the body other than the generative organs; second, those of the uterus and its appendages. In the first class it is evident that lesions which may produce obstinate nausea and vomiting in the non-pregnant, may be present in

the pregnant state. Some of these are cancer of the stomach, chronic gastritis, brain tumor, hysteria producing emesis, and nephritis in its various forms.

The second class—as regards changes in the genital organs—as to position and structure. In the former, we have acute and chronic dislocation of the uterus. In the acute form if no adhesions bind down the uterus, reduction is easily made; if bound down by pelvic inflammations the pathological conditions of the pregnant womb are those in which that organ is forced down into the pelvis and impacted with its fundus against the pubic bones.

Endometritis of various forms has been demonstrated.

In addition to the gross changes in uterus, tumors of the ovary and enlargement of the tubes have been observed in cases of nausea and vomiting in pregnancy. Lindenmann, Dirmoser and others have shown by their microscopic researches upon the tissues of a mother and foetus that died from pernicious vomiting of pregnancy, that death was due to auto-intoxication, produced by a certain toxine.

Symptoms.—A large proportion of the cases of the vomiting of pregnancy never come under the observation of the physician; as a rule, the patient makes the diagnosis herself, or it may be so slight as not to give her much inconvenience.

In the mild cases, just as soon as the patient raises her head from the pillow, there is a desire for instant emesis, which is usually accomplished without straining. The vomited matter is mucus, either acid or neutral in reaction. In severe cases, the sensation of nausea begins just as soon as the patient awakens, followed by emesis as soon as she assumes the erect posture. The material vomited is mucus, often bitter and burning—frequently sour.

This condition may exist till mid-day and even later; after this attack of vomiting, the patient is better and may partake of food.

Hyperemesis, or pernicious vomiting of pregnancy, is the term applied to the condition when the patient rejects all, or about all the food and drink ingested.

According to the statement of Pick, only one case out of one thousand is suffering from this form of vomiting during gestation.

About two-thirds of the cases of hyperemesis of pregnancy begin between the second and third month. In most patients there is at first a gradual passage from the ordinary nausea and vomiting, into the severe form. Her cravings are for varied articles of food and drink, and they are no sooner satisfied than emesis occurs. Vomiting is accompanied by strain- and retching, by dryness of the fauces or by profuse salivation. The vomited matter contains mucus and food taken, bile and even blood. As the case proceeds, distress and pain are felt beneath the sternum. The tongue becomes dry, the gums spongy and bleeding, and the urine scanty and high colored. The temperature is sub-normal at first, later on, in a severe case, it may become elevated. However, in some cases, it may vary only slightly from the normal. The emaciation and loss of strength is rapid on account of the inability of the patient to retain food and the loss of rest and the distressing nausea and vomiting.

In those cases where diarrhoea is present, the emaciation and exhaustion is more rapid. The general appearance of the patient is that of malnutrition bordering on the line of starvation.

Treatment of mild cases of vomiting of pregnancy.—The hygiene and general management are about all that is required. These measures will, in the majority of cases, prove all that is needed. The treatment for the more severe form is dietetic, medical, gynaecological and obstetrical.

The dietetic treatment in severe cases of vomiting consists of a light breakfast of tea and toast or a cup of milk as soon as she awakens. A trial of different articles of food may be made. If the stomach is so irritable that it retains nothing, throwing off even the mucus and digestive fluids when no food is taken, rectal feeding is indicated to tide the woman over the period in which the vomiting is worst.

Medical treatment.—The fact that a large proportion of the

remedies in the pharmacopoeia have been recommended at some time or other for the treatment of vomiting of pregnancy, is abundant proof that drugs are often unavailing. However, satisfactory results are sometimes obtained, prominent among these are the following: oxalate of cerium, subnitrate of bismuth; wine of ipecac, tincture of nux vomica, ingluvin, pepsin, cocain, bromide of soda, morphine, atropine and a host of others.

Gynaecological treatment.—This consists of reducing the various malpositions of the uterus. Local applications of nitrate of silver or other medicaments to the inflammed and eroded cervix. If complicated by chronic metritis glycerin tampons may be used.

Periuterine adhesions may be cautiously broken up or stretched, but this is considered more dangerous than the existing condition itself.

Dilatation of the cervix.—The so-called Copemen method which consists of dilating the cervix either with the finger or with special instruments.

Obstetrical treatment.—This is the induction of abortion. It is the most successful plan when all others fail for true pernicious vomiting of pregnancy.

It is difficult to decide when to induce abortion—each case must be judged on its own merits. The only possible danger is in deferring it too long. It is better to occasionally sacrifice an embryo than lose both mother and foetus.

In my experience, I have met but two cases of hyperemesis, or pernicious vomiting of pregnancy.

Cace I. This case occurred about ten years ago. Age, twenty-three years; normal weight, 120 pounds. Both father and mother, and sister are neurotic.

The first pregnancy terminated at the end of the third month. According to her statement, she did not suffer very much from nausea and vomiting.

In her second pregnancy I was called to see her, about the fourth month. She stated that she began to vomit about the sixth week of conception, and kept on getting worse. On ex-

amination, I found a slightly retroverted womb, which position I corrected. I tried dieting and rectal feeding. I applied blisters to the spine and epigastric region and used internal medication. As all treatment thus far was a failure, and the patient was going from bad to worse, I suggested induction of abortion. This was refused. Consultation with another physician was held and he upheld my views as to abortion, but still the parties concerned would not submit. Nature came to her relief and a spontaneous abortion took place. Her recovery was uneventful and complete.

Case II. This case occurred five years ago. Age, forty years; normal weight, 210 pounds; family history, good; her first pregnancy. Vomiting began early and became uncontrollable. I was called about the ninth week of pregnancy.

On examination, I found a marked degree of retroversion of the uterus, but easy to replace. The cervix hard and resisting. I made local applications of cocain and nitrate of silver. I also dilated the cervix. Various foods were used and several drugs employed—hypodermic injections to induce sleep; but just as soon as she awoke, nausea and vomiting were resumed.

I stopped all food and drink by the mouth and resorted to rectal feeding. The vomiting stopped and she began to feel more comfortable. At the end of the third week nourishment was given by the mouth, but vomiting returned. Rectal feeding was resumed for two weeks longer, and from this time on till the end of the term of gestation there were only occasionally slight attacks of nausea and vomiting.

DISCUSSION.

Dr. Weaver.—Mr. President and gentlemen, I cannot say much more than has been said by the essayist. I never know what treatment I shall use until I see the patient. I saw one case this year that had yielded to ingluvin. One case resisted every other treatment and was carried through by rectal feeding. The question when abortion should be induced, is hard to decide. It should not be done until everything has been tried. I recall one case that was helped by beer; nothing else was tried. There is one other remedy, chlorotone. It has worked admirably for me when all other drugs had failed.

DR. GIBSON.—It is fashionable for the writers to classify this subject with the toxaemia of pregnancy. We have all had trouble with these cases and when we find one with so many remedies recommended in the text books it goes to show that none are certain and all are doubtful. In one case where I dilated the cervix and painted with carbolic acid, it worked admirably, and the next morning I found the patient singing at her work. These cases are not to be lightly held. I regard a case of vomiting of pregnancy as a magazine likely to explode at any time. It is often the forerunner of eclampsia.

DR. MINER.—Dr. Stone of New York, has been doing some work along the line that the pernicious vomiting is due to acute yellow atrophy of the liver. Dr. Williams of Baltimore, believes that there are two lesions, one in the kidney and the other in the liver, and that the toxaemia of pregnancy is due to either one or both.

DR. WEAVER.—How are you going to explain these cases that weather the storm, if the vomiting is due to acute yellow atrophy and toxaemia?

DR. GUTHRIE.—I am very much impressed by Dr. Weaver's question. I think we find pernicious vomiting that began with pregnancy, and ends in abortion or delivery at term. It was three years ago that I saw a case in consultation. The patient had consented to abortion. I had read of dilatation. We dilated to one-half inch. Vomiting ceased and she went on to term. If this had been due to the liver, it would not have been relieved by dilatation. I have relieved these patients by painting the cervix with silver nitrate. Some means must be found to relieve these patients or they will die. I do not believe that all are due to the liver. I have used chlorotone and had good results. I have found that it is good for sea-sickness.

DR. MINER.—Williams divides these cases into reflex and toxaemic. He believes that a certain number are due to toxaemia.

DR. WYCOFF.—I have known of two cases that have been benefitted by blisters over the splanchnic organs.

DR. WEATHERBY.—I recall a case that I know of. We painted the cervix with a strong solution of iodine. We had to paint every two weeks until she came to delivery.

DR. PERSON.—I have not mentioned sympathetic vomiting They all get well, so we do not have any autopsies.

HERNIA FROM INJURY.

BY DR. C. W. PREVOST, PITTSTON, PA.

READ OCTOBER 18, 1905.

George K.; laborer; Polish; was admitted to the Pittston Hospital, May 16, 1905. He gave a history of uniform good health up to the date of admission as given above, when he was struck on the abdomen by a heavy stone, and something seemed to give away. The man found a large lump in the right groin and the scrotum. He was brought to the hospital and on examination, there was found to be a large hernia. Ether was given the patient and an attempt was made to reduce the mass by taxis, which failed. The patient was at once prepared for operation, and was operated on by Drs. Gibby and Newth. They found the hernia to consist of the head of the caecum, the appendix, twelve inches of the ascending colon and about twenty-four inches of the small intestine.

The constricting part of the canal was enlarged, the colon, caecum and intestine replaced and the appendix removed. In closing the canal, there was found no hernial sac, and the hernia came through the peritoneum at the internal ring. The ring was closed by buried sutures in the usual way. The man made a good recovery and left the hospital June 16, and returned to work without wearing any belt or truss.

July 1st, he returned and was found on the lawn of the hospital rolling in pain. He was taken to the operating room, and Dr. Perry called me to see the case with him. We found a tumor in the same region and about the same size as that found on May 16, with parts much congested and swollen.

The patient being etherized, we cut down, and the tumor was found to contain a large section of the ileum and the mesentery extending almost to the head of the caecum. The condition of the bowels was dark colored, and felt boggy with no circulation. The line of demarcation from healthy bowel was very well shown, and after using hot towls, as there was no change in color, or other condition, we decided to remove a portion of the bowel. A Murphy button was prepared and

we took out the gangrenous portion of bowel, about twenty-four inches, and the mesentery, placed the button, carefully suturing the bowel, and closed the canal with chromacized catgut. We sent the patient to bed with a grave prognosis, as he was suffering from much shock. On the following day his condition was much improved and he passed some gas, and at the end of forty-eight hours his bowels moved. The button passed on the ninth day.

The patient made a good recovery, and he was being held in the hospital till his wife should bring him a belt. On August 26, he got out of bed and made his escape from the hospital, with nothing but a blanket around him. The blanket was returned the next day and we have heard nothing more of him, only that he is in good health.

THE PRESENT EPIDEMIC OF TYPHOID FEVER IN THE NANTICOKE REGION.

BY DR. N. RAY MYERS, WANAMIE, PA.

READ NOVEMBER 1, 1905.

To discuss this subject properly, or to write an interesting essay upon the subject, should require some one who is thoroughly familiar with it from every standpoint.

Living so close to the infected region and having had a number of cases, due to the same source of infection, I shall proceed to discuss the subject as briefly as possible, giving in detail what little knowledge I had or was able to obtain through conversation with the physicians, and the leading citizens of Nanticoke.

Before describing the epidemic, a few words in regard to the latest views of some of the various authorities on the subject of typhoid fever will not be out of place, since the leaders of discussion will, no doubt, have something of very great importance to say along the lines of etiology, pathology, bacteriology and treatment of this insidious and very frequently intractable, fatal disease.

Like all subjects in medicine, changes of opinion of some of the very ablest medical writers of our day, have taken place concerning the various phases of this disease.

Since the days of Eberth, who was the first to discover the typhoid bacillus, wonderful advances have been made in the science of pathology, bacteriology, etc.

So far as bacteriology of the disease is concerned, no one at present disputes the fact that the bacillus discovered by Eberth in 1880, and first obtained in pure culture by Gaffky, is the sole cause of typhoid fever.

And Leube in his excellent work on Medical Diagnosis, says, "that although the dependence of enteric fever may be unquestionably looked upon as due to bacilli, it has been more and more developed lately, that the absolute proof of these micro-organisms is by no means easy, and that a confusion with other typhoid-like bacilli, especially with those belonging to the group of the bacterium coli commune, is very difficult to avoid. The practical application of the determination of the typhoid bacilli in the diagnosis of enteric fever is extremely limited up to this time."

Pepper, in his definition of this disease, describes it as a specific, infectious, febrile disorder, sporadic, or epidemic, often communicated by the contagion from the stools; characterized by lesions, chiefly of the intestinal and mesenteric glands and the spleen, with the constant presence in them of the bacillus of Eberth, etc., while Allbutt, in his system of medicine, defines it as an acute, infectious fever, due to a specific micro-organism, occurring endemically, sometimes epidemically, clinically characterized in ordinary cases, by a gradual onset, followed by a period of continuous fever, with diarrhoea, anatomically characterized by more or less extensive ulceration, affecting Peyer's patches in the ilium, with swelling of the mesenteric glands and enlargement of the spleen.

You will observe in the two definitions, as given by two of the greatest writers on the subject, especial stress is laid on this fact, that the bacilli enter the system by way of the intestinal tract or mucuous membrane. Pepper states it to be

true of the vast majority of cases. That they may enter by way of the respiratory tract, has been asserted but never proved.

Leube says the bacilli colonize with preference in the lymphatic organs. In the mesenteric glands, in the spleen, and especially in the solitary follicles and in Peyer's patches of the intestines, in which they produce inflammation and necrosis of the tissue. But the modern view of the nature of typhoid fever is, that it is essentially a general infection in which the lesion of the intestines plays a prominent, but not a necessary part.

The bacilli apparently first invade the blood, no matter what their avenue of entrance may be, and the affection of Peyer's patches is to be looked upon as a secondary colonization from the blood, rather than the original source of the infection. Further, it has been suggested by various authorities that the circulating poison of typhoid fever, which may be due to the toxins elaborated by the germs or to the toxins due to the reaction between the toxins or between the germs, and the cells of the patient may be partially excreted by the lymphatic tissue of the bowel (solitary and agminate glands) with consequent ulceration of the glands.

These views have important practical consequences.

First as to diagnosis. All admit that the surest means of diagnosis by laboratory methods, is by examination of the blood, and this affords also the best chance for an early diagnosis. These same writers claim that even when the diagnosis is made by clinical observation without resort to laboratory methods, the hematogenous origin and character of the infection should lead us to recognize the possibility of typhoid without intestinal symptoms and the attention should be directed to the character of the fever and the general symptoms rather than to diarrhoea, which is sometimes absent during the entire course of the disease.

Second as to treatment: The claim that typhoid is a general infection with intestinal localization leads to a juster estimate of the value of intestinal antiseptics in the disease. Since the

bacteriae are in the blood and may settle in other organs besides the intestines, the use of antiseptics as a curative treatment is without good foundation, notwithstanding the claims of Woodbridge and a host of others as to the efficacy of their preparations in the treatment of this disease; some claim to cut short or abort the disease by the use of intestinal antiseptics. How is it possible to destroy bacilli in the blood or in the internal organs by intestinal antiseptics alone. Nevertheless, the value of intestinal antiseptics is not to be denied since a large number of cases are due to lesions in the digestive tract. When diarrhoea or constipation does occur, it is altogether proper to apply remedies that act especially on the intestine, although the disease is in fact a constitutional one, and not a local affection. Strassburger found more bacteriae in the faeces of cases with diarrhoea than in those that were constipated. This fact would lead one to believe that cases do better if they are constipated than if the bowels are loose. Also, that the antiseptic treatment, in which the bowels are kept loose, has not been the most successful.

To the pathologist and bacteriologist, much of the discussion pertaining to the mode of entrance into the system of the bacillus of typhoid, and the various organisms so closely resembling the bacillus of Eberth, will have to be left, since the general practitioner can seldom have either the apparatus or the skill to make the diagnosis between the two forms of bacterae and their modes of entrance into the body.

There are a number of modes by which the bacillus may gain entrance to the human body, viz.: by the use of raw vegetables, infected butter, transmission by insects and animals, or by contact infection. But the greatest source of infection, especially in the United States, is due to an infected water supply. Notwithstanding the great care that is being taken by those having in charge the health and sanitary conditions of our Commonwealth, three of the greatest epidemics of typhoid fever known to modern times have occurred in the State of Pennsylvania within the past twenty years.

The first great epidemic occurred at Plymouth, Pa., in 1885,

in which over eleven hundred persons were ill with enteric fever and which caused the death of at least one hundred and fourteen persons. The most able and complete report of the Plymouth epidemic was made by Dr. L. H. Taylor of Wilkes-Barre, Pa., an honored member of our society.

The perusal of this report is of great value to every physician, since it gives in detail, a description of one of the severest epidemics of modern times. So severe, indeed, that some doubt as to its being typhoid, prevailed, and indeed, to-day, it is referred to by many medical writers as the "Plymouth fever." After a most careful search, the cause of this epidemic was found to be due to an infected water supply. A patient with typhoid fever resided in the water-shed which supplied the town with water.

The second great epidemic in our State, occurred at Butler, Pa., in 1903, in which about thirteen or fourteen hundred persons were ill with typhoid fever, in a period of less than one month, with a death rate of perhaps 10 or 11%. As in the Plymouth epidemic, an investigation of the drainage areas showed the existence of numerous sources of pollution, but the most particular one was the occurrence of cases of typhoid fever on the banks of the Conoquenessing Creek, the water of which was used to supply the citizens of the town of Butler, from October 20 to November 2, 1903. The regular water supply of Butler was suspended on October 20th, owing to a break in their water system, hence, the pumping of typhoid polluted water from the Conoquenessing Creek to Butler from October 20 to November 2. In that time, 1000 cases are reported. This leads us now to the third great outbreak of typhoid fever in our State or the present epidemic at Nanticoke and surrounding towns and villages.

During the months of July and August, 1905, the rainfall throughout this part of the State was exceedingly heavy, more especially so in the Wyoming Valley. Every creek and rivulet soon overflowed its banks and the various reservoirs that supply the thousands of people living in our beautiful valley with pure water were soon filled. All were delighted with the

prospect of an abundant supply of pure water for the coming fall and winter. Alas, for the people of Nanticoke and adjoining towns, their cup of joy was soon turned to one of sorrow, for lurking in the water which supplies their need, was found the typhoid germ, and rich and poor alike, were soon attacked with typhoid fever. Hundreds of families in Nanticoke, West Nanticoke, Alden, Sheatown and Lee Mine, or wherever the pipes of the Nanticoke Water Company were laid, in a few days, were attacked by this dread isease. That the water supply was the source of the infection, there can possibly be no doubt, since in this immediate neighborhood, every case reported, was found to have used Harvey's Creek water.

Nanticoke has been growing very rapidly in the past few years, and like many other towns of rapid growth, she has been careless, and before she was aware, the evil hour was upon her and typhoid like a cyclone struck her, carrying suffering and death to hundreds of homes.

Shamefully careless in not providing proper sewerage, or in cleansing her alleys and streets so that when the pestilence came she was found pitifully helpless and unable to combat it.

A town of nearly fifteen thousand people, with very little attention towards proper sanitary conditions, the avenues for disease were wide open and when the epidemic of typhoid struck this careless town, it had full sway, and over five hundred persons were infected with this dread disease in its most virulent form. Over four hundred cases were found in Nanticoke alone, with forty or fifty deaths, a death rate of a little over ten per cent. Not only in the deaths of forty or fifty of some of her best young people has Nanticoke suffered, but from a financial standpoint she has received a staggering blow. Business was paralyzed and will be for some time, since the outside world gives the town a wide berth, feeling that the people and especially the officials of the town are to blame for so serious an outbreak.

Notwithstanding the carelessness of the borough officials, the direct origin of this epidemic did not occur within the borough limits.

Nanticoke, West Nanticoke, Hanover, Lee Mine, Sheatown and Glen Lyon are supplied by water taken from Harvey's Creek. The company is known as the Nanticoke Water Company.

The reservoir or in-take pipe is located several miles up Harvey's Creek from West Nanticoke. The water-shed of this creek is a very extensive one; hundreds of people are living within its bounds, thus affording countless opportunities for polluting the water; also, at the headwaters of this creek, or what is known as Harvey's Lake, thousands of people from all parts of the country and of all nationalities, visit annually. This in itself, affords the greatest menace to the health of the people using the water from this creek.

The epidemic at Nanticoke, having assumed serious proportions, the town council, accompanied by the State Board of Health, made a most determined effort to locate the source of the pollution of the water. After a thorough inspection of the principal part of the water-shed, from the in-take pipe at West Nanticoke to Harvey's Lake, nothing directly bearing on the cause of infection could be learned. The State and local officials of the Board of Health, not to be deterred in their efforts to get at the focus of pollution, most thoroughly continued their search and their determined efforts and perseverance were at last rewarded by learning of a case of typhoid fever ten miles back from Harvey's Creek, near what is known as Lehman's Corners or Centre. After a careful investigation it was found a young man had an attack of typhoid some time in July, 1905, and in order to make sure of it, the physician who had the case in charge, was found, and verified the facts of the case. At last, the first cause or origin of this terrible epidemic was found. Back fifteen or twenty miles from Nanticoke and surrounding towns, with their thousands of unsuspecting people, the excreta from a patient suffering with typhoid fever, were no doubt, carelessly thrown out on the ground with, perhaps, no attempt at disinfection, to be washed down the streams at the first heavy rainfall. Indeed, it was learned that the excreta from this patient was thrown into a

privy built over a small stream, and from thence, it was washed into a bog. During August of this year, a heavy rain flooded this stream and bog, carrying this polluted water into another small stream that empties into Harvey's Creek, and thus it was washed directly into the pipes of the Nanticoke Water Company.

And what has been the result? Hundreds of people were soon stricken by this terrible scourge and nearly three score deaths resulted in a very short space of time.

Nanticoke, like her sister borough, Plymouth of twenty years ago, was downcast with gloom and evil forebodings. Scores of new cases were being reported every day and since all had drunk the polluted water, there was no telling how appalling this epidemic might become.

The dozen or more physicians of the town being unable to cope with such an extensive epidemic, Dr. Dixon, head of the State Board of Health, very promptly sent his reperesentative, Dr. Johnson of Harrisburg, and a number of nurses to assist in combating the disease.

The town council had the City Hall fitted up for an emergency hospital, and soon scores were being properly treated and cared for. The hospitals of Wilkes-Barre were kindly thrown open to all who cared to go there. Aid, in the shape of money, clothing, food, etc., was given freely and promptly to this suffering community.

The nurses supplied by the State Board of Health could be seen going from house to house, bathing and tenderlv caring for those who did not care to go to the hospital, or were unable to go, and also instructing the people how to care for their sick in the absence of physician or nurse.

The disease assumed a most virulent form. The most severe form of toxaemia prevailed from the very beginning of an attack.

A temperature of 104° to 105°, with delirium seemed to be the rule in which a majority of the cases were ushered in. I have been informed by several physicians of Nanticoke, that at their first call, they found many of their patients wildly delir-

ious and with an extremely high fever. In the majority of my own cases, I found the same conditions to exist. Of the various complications, pneumonia and intestinal hemorrhage occurred in a great many cases. The great majority of deaths was due to pneumonia, especially in those that occurred in Nanticoke and in the emergency hospital.

Several cases of phlebitis were reported as well as an aggravated form of rheumatism, neuralgic pains, etc., in the lower extremeties, principally in the feet and toes.

In comparing the present epidemic with that of Plymouth, in 1885, we find the conditions to be very similar, viz.: in the severity of the symptoms and rapidity of the spread of the disease and in the percentage of deaths.

Dr. Taylor in his report, states, "that some doubt as to the diagnosis prevailed for a short time, even among some of the medical gentlemen in attendance, some claiming it to be typhoid fever, others malarial fever, typho-malarial fever, and typho-malarial meningitis."

In the Nanticoke epidemic, I learn, that owing to the severity of the disease, some of the more experienced physicians were inclined to believe it to be more of a form of typhus fever than typhoid. As in the Plymouth epidemic, this doubt was soon dispelled and the true nature of the disease made manifest.

Again, referring to Dr. Taylor's report, we find that the actual number of cases in the Plymouth outbreak, was eleven hundred and four, and one hundred and fourteen deaths, or a mortality of nearly ten and one-third per cent. In the Nanticoke epidemic, in the borough of Nanticoke alone, there were more than four hundred cases reported and forty-one or two deaths, or a mortality of nearly eleven per cent.

The Plymouth epidemic lasted a period of about eight months, while that of Nanticoke began in August, and the emergency hospital began to close up its work in November. Of the sixty cases treated at the emergency hospital, there was a mortality rate of a little over sixteen per cent., while the percentage of deaths throughout the town was a little less than ten per cent. The higher rate of mortality in the hospital

was due to the fact that a number of patients were taken there in a moribund condition. As to the direct cause of this epidemic being due to an infected water supply, there can possibly be no doubt. Cases of typhoid fever were found in all parts of Nanticoke, West Nanticoke and Newport township, or wherever the mains of the Nanticoke Water Company were laid, except in Glen Lyon, which town, up to the present time, November 1, 1905, has not had any cases reported. Glen Lyon, a town of over three thousand people, lies three miles west of Nanticoke in Newport township, and uses Harvey's Creek water. Midway between Nanticoke and Glen Lyon, a reservoir has been built and is filled by water being pumped from Nanticoke. This reservoir is located on one of the high hills near Wanamie, and is always exposed to the sun's rays.

Dr. Johnson, of the State Board, tells me that this water and mud from the bottom of the reservoir, were analyzed and the water found to be unfit to use. The typhoid germ was not found, but the colon bacillus was. Why this epidemic did not reach Glen Lyon when the same water was used is hard to explain. The hygienic condition of the town is extremely bad, and it is possible typhoid may get in its work yet.

The villages or mining towns of Alden and Wanamie are situated between Nanticoke and Glen Lyon and not a case developed in either place except those persons who worked in Nanticoke, or had drunk of Harvey's Creek water.

In conclusion, I would ask, "What will we learn from this terrible scourge?" Dr. Taylor, in his able report of the Plymouth epidemic, twenty years ago, very pertinently points out the great necessity of physicians and nurses seeing that all poisonous germs be destroyed and perfect cleanliness be observed,—a lesson which people are slow to learn. Surely, towns lying in such close proximity to Plymouth ought not to forget so soon the terrible plague and its consequent mortality, visited upon that little town, in the short space of twenty years, The way of the transgressor is hard. So long as we sow the seed of pollution and filth, just so surely will we reap a harvest of sickness, suffering and death. Nanticoke and her neighboring towns have reaped an awful harvest, not only from a busi-

ness or financial standpoint, but in the loss of more than fifty precious lives in the short space of three months.

No matter how much we are wont to censure the water companies, so long as people will carelessly allow filth to accumulate about their homes and in the streets and alleys of our towns, thereby creating and cultivating a suitable soil for germ life, just so surely will we have these epidemics. That little typhoid germ from Lehman Centre only had to get to Nanticoke by way of the Nanticoke Water Company's pipes and there find a soil, suitable to multiply and spread disease, suffering and death. Who knows but that if there had been a safe filtration plant at the intake pipe, in Harvey's Creek, that germ could not have reached Nanticoke and the present terrible epidemic would not have occurred. Water companies should be held responsible for any pollution of the water they furnish and are paid for, and township, borough and city officials should be held responsible for the sanitary condition of our commonwealth.

DISCUSSION.

Dr. Roe.—Mr. President and Gentlemen, I was very much interested in this paper giving such a good discription of the epidemic at Nanticoke. Epidemics are nearly always due to infection of the water supply, milk, oysters and direct contact, as in the Ninth Regiment. Flies, also are a cause. Back of that is the patient. He is the source of all epidemics. If the excretions had been taken care of there would have been no epidemic at Plymouth or at Nanticoke. This could have been prevented by care. In the Wilkes-Barre City Hospital, there have been fourteen cases from Nanticoke. We have had all varieties and complications. I will read from notes made by Dr. Donald Guthrie, the resident physician:

Of the fourteen cases from Nanticoke, all have gotten well. There were eleven other cases.

The average age, 26⅗ years. Oldest, 45; youngest, 15.

Males, 16; females, 9.

Widal reaction present in 24 cases.

Condition of bowels.—In twenty-one cases constipation was present. In two of these cases, diarrhoea was present in first two days, and in the other cases, present for the first week. In four cases there was diarrhoea.

Treatment with intestinal antiseptics.
Tr. iodine M ii, acid carbolic M ss, in ten cases.
Listerine et elixer lactopeptin in six cases.
Salol gr. iii, quinine gr. ii, in five cases.
No intestinal antiseptics in four cases.

Number of sponges.—Nineteen cases received sponges, six did not. Of the nineteen, the highest number of baths given was forty. The lowest was one. The average baths of nineteen cases, was eighteen.

Results.—Twenty-one recoveries, two deaths, two still in the wards. In twenty-five cases, giving a mortality of eight per cent.

One death occurred in rigor after a sponge, death due to pleuro-pneumonia. The other case was brought in, in a typhoid state, impossible to get history of illness.

Conclusions.—Of the twenty-one cases recovered, the average number days of fever:

In seven cases treated by Tr. iodine M ii and acid carbolic M ss, thirty and three-sevenths.

Six cases listerine and elixir of lactopeptin aa dram I, twenty-one and one-sixth days.

Four cases no intestinal antiseptics, twenty-six and one-half days.

I found that most of the cases responded to the sponge bath, but when they did not, we alternated with phenacetin gr. v, guarded by strychnine and caffeine. Acetozone is called almost a specific by the manufacturer. I found it difficult to administer. Another point is the diet. Liquid diet is proper. I am inclined to think we are tempted to prolong the liquid diet. Seven days after the temperature has become normal, is my rule. I think that soft diet might be tried before that time, but I have not had the courage to try it myself.

Formaldehyde is used in the hospital for disinfecting the stools.

Dr. Miner.—Mr. President and gentlemen, I missed the paper. I was interested in the Nanticoke epidemic. I went over the water-shed shortly after it broke out. On August 24, the first case was reported, and forty cases were reported in the next week. The water company went over the shed and did not find anyone that had had the disease in the last year. We heard of one case, however. On the eighth of September, we went to the home of Columbus Hooper, twelve

miles from Harvey's Creek. His thirteen-year old son came down with typhoid fever on the third of July. He was treated by the doctor in Lehman. His father said, that he tried to bury the bowel movements, but as they were so many and he so busy, he could not do it. Beneath the house is a spring that runs through a swamp to Harvey's Creek. Prof. Dean found evidence of colon bacili in this creek early in August. There were several hard showers in this month. The watershed has an area of fifty square miles. This was the only case in the neighborhood in a year. The peculiarity of this epidemic is the long distance that the infection was carried—twelve miles. The water company disinfected the premises with calcium chloride and the reservoir with copper sulphate.

DR. TAYLOR.—Mr. President and gentlemen, the Nanticoke epidemic is a subject that I do not know much about. There is a similarity between this and the epidemic at Plymouth. There has been no change in twenty years in the cause of epidemics. Whenever you find a large one, it has come from the water. Dr. Roe, in his remarks, covered the whole ground of the typhoid patient. Take care of the patient. We drink filthy water but we do not get typhoid fever. In Plymouth there were 1104 cases, and of these 114 died, a trifle over ten per cent., about the same as that of Nanticoke. I do not think the distance is great. Two hours with these storms in the early part of August would easily carry the infection twelve miles. In the Plymouth epidemic, they had a severe form of the disease, in the beginning but later it became mild.

I will read a part of the conclusion of my report to the State Board:

"Another lesson taught by this history comes more nearly home to us all. The water companies throughout our land should be taught that they must furnish us the water, for which we pay, from the very best source that the country affords. Not only should they avoid the use of river water contaminated by sewage, but they should be compelled to remove from the banks of their streams and reservoirs not only all probable, but all possible, sources of pollution.

"A third pertinent suggestion is in reference to the need of local boards of health, or of sanitary committees, having the power to compel citizens of any plague-stricken town to stop spreading the cause of the disease. They should not be allowed to nurture in their houses and surrounding yards the poison which has already decimated their own households.

Disinfection should be compulsory, and all hygienic and sanitary regulations rigidly enforced.

"Had the proper efforts been made in Plymouth when the true nature of the disease became known, the epidemic might have been stamped out in a few weeks, instead of continuing many months, furnishing hundreds of new cases, and causing the loss of many valuable lives.

"In closing this report, it is a matter of great regret to be compelled to say, 'The end is not yet.' Notwithstanding the lessons taught and the warnings given, the sanitary condition of Plymouth is by no means what it should be. Many wells are, without doubt, affected, and the germs from undisinfected excreta in many parts of the town are only awaiting favorable conditions of development to spring into vigorous activity and cause additional sorrow and distress which could and should be avoided."

DR. WEAVER.—The mysterious thing to me is that there should be no typhoid in Glen Lyon. I agree with Dr. Taylor that the germs could be carried that distance, but I can think of no explanation of the mystery. I agree with Dr. Roe that the one thing is the patient, but that does not relieve the company who were careless in this matter, and I think that the Nanticoke Water Company should be made liable. No jury would acquit the company on this charge.

DR. FELL.—I do not know whether it has anything to do with it, but there has been a great deal of diarrhoea at the Oneonta Hotel. The bell boys gave lake water to the guests. I made the remark then that there was a good reason for an epidemic of typhoid fever. Now some days they have large excursions run to the lake of several thousand people, and there must have been some of these who had the disease. I do not believe that daylight will kill the germs, and I believe there are certain duties devolving on all water companies that should be enforced. I believe the Nanticoke Water Company knew the danger and I believe that the Wilkes-Barre Water Company knows the danger that we are being exposed to.

DR. WHITNEY.—The water-sheds must be cleared of inhabitants.

DR. MENGEL.—That the water company is careless is evident. I do not know that Wilkes-Barre people know much about the water they are using. About fifteen or eighteen families live around the Spring Brook reservoir. From the reservoir to the in-take dam the water runs open in the old creek bed. There is no fence along it and one farmer waters his twenty

to thirty cows in this creek. There are also from one hundred and fifty to two hundred Polanders living at the stone crusher, near the in-take dam. When they get sick they seldom call in a doctor.

DR. KRAJEWSKI.—I thank Dr. Myers for his paper. The water was the cause. On the 24th day of August the first case was reported; forty-five cases were reported in the next ten days; four hundred cases were reported in all, and there must have been two hundred that were not reported at all. It was a severe type of the disease. There were forty fatal cases. Taking the people and the location into consideration, we did pretty well. I had sixteen cases in the hospital. I had quite a number of cases where I used the sponge bath.

DR. CORSS.—I recall the epidemic at Nanticoke some years ago. A number of men at one of the breakers began to develop typhoid. They had been drinking water from a spring below a row of company houses. A case of typhoid had occurred there two years before. They had lately filled up the privy. The superintendent said that when they threw in the dirt, the water ran out into the spring. In this case, fresh faeces furnished a culture medium.

ABSCESS OF BRAIN.

BY DR. H. B. GIBBY, PITTSTON, PA.

READ NOVEMBER 1, 1905.

The case I have to report to-night, is that of a boy about 12 years of age, whom I was hastily called to see at midnight of August 12th, 1903.

The young fellow had complained of some headache in the evening but retired in apparently good health. About twelve o'clock his father was awakened by some slight noise, and on investigation, found the boy lying unconscious, with evidences of having vomited freely, previous to his fainting spell.

By the time that I arrived the boy had recovered consciousness, and complained slightly of his head. On examination, a small swelling was found in the mid-frontal region. Gave history of having been struck by a hard ball.

Two or three days later fluctuation was evident, an incis-

ion was made and a small quantity of pus evacuated. The incision closed in a short time and the young man spent a week at one of the lakes to recuperate before starting school.

He began to attend school in September, but complained so much of a headache that after a few days' attendance he was allowed to remain out of school. He was encouraged to take a great deal of out-door exercise, and was apparently in perfect health, until the last of the year when he began to complain of noise in his ears. At about the same time his eyes began to give him trouble and pain if he read very much.

In the early part of March he began to lose flesh and become languid and did not care to leave the house.

March 12th a physician was called, who, after an examination, said that he was badly "run down," and he was given Angier's petroleum emulsion, and was told to drink two quarts of milk daily.

During the next few days he was drowsy and complained of some pain in the head, which, however, was relieved by the local application of menthol.

On Tuesday, March 17th, the pain became more severe and paroxysmal in character.

Friday the pains increased in severity, occurring in regular paroxysms, lasting about two minutes, during which he cried out with a peculiar terrifying cry.

The only evidence of mental disturbance during his entire illness occurred Friday morning, when, being slightly reproved by his father, his face assumed a simple, idiotic expression. His pain continued all day Saturday, the paroxysms occurring about every fifteen minutes.

Sunday morning, March 20th, he arose and dressed himself about 9:30 and went to the bath-room, where he fainted away. At 10:40 A. M. he had a severe convulsion which lasted about eight minutes. At 3:40 P. M. another convulsion occurred which was somewhat milder than the first and also lasted about eight minutes.

His physician brought another physician that afternoon and, after consultation, it was decided that a serious brain lesion existed, and they advised that a surgeon be called.

I saw the patient that evening for the first time after my attendance the previous August.

At ten o'clock that evening his pains left him, bromides having been freely used during the day, but convulsive movements occurred at intervals of a half-hour throughout the night.

Dr. Lewis H. Taylor saw the case with me on Monday, and his examination of the eyes showed the presence of choked disc in both sides. As an examination of the urine disclosed no pathological condition of the kidneys, we made the diagnosis of a brain tumor or abscess. Dr. Taylor suggested the use of iodides, which were continued for three days, during which time the pain was so severe that it could only be controlled by morphia, and slight convulsions occurred at intervals of forty minutes to one hour.

A blood count showed an increase in the number of leucocytes, which lent its weight in favor of the diagnosis of an abscess. As his condition steadily grew worse, we decided to operate as the only means of relief.

In the entire absence of any motor disturbance, or any other localizing symptoms, we decided to explore the frontal lobes on both sides. Thursday afternoon the patient was etherized and, having complained of the most pain on the right side, the skull was trephined in the right frontal region at a spot that looked somewhat suspicious.

The dura was opened and the brain carefully explored with a grooved director in several directions but no pus or tumor found. When this incision had been closed, the patient's condition was such that further exploration was deemed unwise.

He rallied nicely from the operation and his general condition was fair for several days. He was conscious and responded to requests, but did not talk much and seemed to be almost entirely free from pain; also no convulsions occurred subsequent to the operation.

There was some little loss of brain substance during the first few dressings. The temperature ranged between 99° and 101° F., although it occasionally touched the normal.

The patient's condition steadily grew worse and he died April 6th, 1904. An autopsy showed the frontal bone on the left side, at a spot corresponding exactly to the location of our incision through the right frontal bone, to be thinned out to the thickness of tissue-paper, and to be slightly bulged outward by the pressure of the brain beneath. The brain substance, directly under this, was normal except for some congestion, the dura not being adherent to the brain nor frontal bone.

Deep down in the frontal lobe was an abscess about the size of a duck's egg, completely surrounded by a distinct membrane and containing the usual peculiar greenish pus of a brain abscess.

The abscess was no doubt of the chronic form, with a latent period extending from August, 1903, to March, 1904.

An interesting question is, what was the relation between the superficial and deep abscess—was the brain abscess caused by the same injury that produced the superficial abscess, or was there in some way a metastastis from the superficial abscess?

REPORT OF A CASE OF PYONEPHROSIS IN A NURSING CHILD OF SIX MONTHS. OPERATION, RECOVERY.

BY DR. C. P. STACKHOUSE, WILKES-BARRE, PA.

READ NOVEMBER 15, 1905.

Master Charles S. was born of healthy parents September 8, 1904, was entirely breast fed and was a typical healthy babe, whose chief duty was to eat and sleep, and he attended strictly to business. His mother was very careful regarding his food, and so far as can be ascertained there had absolutely no solid food entered his stomach until the morning of the attack, when he was given a small piece of cracker. The bowels were regular in habit and had moved freely early in the morning of the attack, and there was free excretion of apparently healthy urine.

On the morning of Monday, March 6, 1904, he was taking

his customary morning snooze when suddenly about 10:00 A. M. he began to cry loudly as if in intense pain. A laxative and some colic cure were at once administered, and after a couple of hours he was laughing and cooing as if nothing unusual had occurred. In the afternoon he was a little restless, but did not cry as long as he was carried. He was restless and feverish all night, not requiring constant attention, but would wake frequently, worry awhile and then go to sleep again. A laxative and a dose of nitre were administered by the mother and a moderate response was obtained with little or no diminution of restlessness.

I saw him on the afternoon of the second day and found him with a peculiarly pinched, anxious expression upon his face, very restless, his little hands in constant motion from the wrist and a continual closing and opening of the fists, some tossing of the head from side to side, and a slight grunt accompanying each expiration, all indicating severe pain. Examination found the lungs normal, pulse 130 and of good quality, and temperature 102⅗°. The abdomen was distended and tympanitic above the umbilicus with considerable resistance and tenderness in the right hypochondriac and lumbar regions, while below the umbilicus there was little or no distention, resistance or tenderness, permitting careful examination of the lower abdomen without discomfort. An enema of olive oil was immediately followed by a very free, normal, yellow, bowel movement, and fractional doses of calomel given during the night gave free action of the bowels and kidneys the following day, resulting in a marked improvement in all his symptoms, and he was decidedly less worrysome, although the temperature was still 101⅗° and pulse 130.

On the fourth day his temperature and pulse became normal and he had apparently returned to his usual healthy condition.

One week from the onset of this attack occurred a second, which differed somewhat from the first. After a few hours of restlessness and evident distress he began to retract the head and body, roll the eyes back and appeared to be going into convulsions. There was the same pinched, anxious expression

on the face, and each expiration was accompanied by a pathetic little moaning cry. Examination found no trouble in the lungs, pulse 130 and of good volume and temperature 103°. There was now no distention or tenderness in the right hypochondriac region as in the first attack, while in the right iliac region, the muscles were rigid and exquisitely tender, the slightest touch eliciting cries of pain. The same peculiar action of the wrists and hands was present at this time and constant until after the operation.

After a very restless night the disturbance in the appendiceal region seemed accentuated, and there was added to the symptoms already described flexion of both thighs upon the abdomen. It was at this time first noticed that he would cry just before micturating, and that the urine had a strong odor and left a dark stain upon the diaper.

Wednesday, the third day of the second attack, he was decidedly weaker and the temperature was higher, while the pulse still remained 130 and of good volume. The facial expression was one of general misery. He had passed a very restless night, apparently in constant pain. His condition was generally unsatisfactory, and, believing pus to be present, a consultation was asked for and Dr. Wolfe saw him with me, but as no mass was outlined it was decided to tarry a day or two, seeking if possible to avoid subjecting the little fellow to so dangerous an operation.

On Thursday he was still more weak and restless, the temperature was higher, going to 104⅕° toward night, and the pain in the hypogastric and lumbar regions was extreme.

On Friday his condition was one of extreme prostration, the abdomen was distended and tender, the face was anxious and pinched, both legs flexed, temperature 103⅖° and pulse 150. Dr. Wolfe was again summoned, and he was examined under chloroform, when it was thought a mass could be felt in the right iliac region. The condition was considered so urgent that immediate operation was advised and the little patient was removed to the Mercy Hospital and the operation performed that same afternoon, Dr. Wolfe assisting.

Through a small incision over McBurney's point an abnormally long appendix was delivered and removed, but presented only slight thickening and congestion of the mucous membrane near the base and for the last inch of the distal extremity. Feeling positive that the severe symptoms could not have been produced by an appendix so little damaged, careful examination was made, and a mass found posterior to the colon, lying upon the lumbar vertebrae and extending below the crest of the ilium which proved to be the greatly distended right kidney. The incision was extended upward, a small cross incision made on the lumbar side, and the kidney, which was freely movable, was delivered out of the abdomen. It was about the size of the acute parenchymatous kidney of an adult, irregular, almost lobulated in shape, of blueish red color and fluctuated upon pressure. Upon puncture about a teacupful of thin, brownish yellow, offensive pus was obtained. The parenchyma was about three-fourths of an inch thick and of a dark red congested appearance. The fluid appeared to be chiefly in the pelvis of the kidney, but extended by at least two openings into the kidney substance. The ureter was followed with the finger to the bladder and no obstruction was discovered, but as there was no sterile instrument small enough to pass from the kidney through the ureter into the bladder, and the condition of the little patient did not justify waiting for one to be prepared, the kidney was anchored to the abdomenal wall and the abdomen closed, leaving free drainage into the pelvis of the kidney.

The condition for a week following the operation was precarious. There was very free drainage from the wound, but we had no evidence that the ureter was patulous. On the fourth day a strong aqueous solution of methylene blue was injected into the pelvis of the kidney but no trace of it was found upon the diaper.

On the 24th of March, one week after the operation, the patient was anesthetized and two filliform bougies were passed through the kidney and ureter into the bladder, when there was an immediate gush of urinous fluid from the wound. The

ureter was apparently occluded for at least an inch. The bougies were left in place for two days, during which time no urine was voided naturally, but both kidneys were drained through the wound. After the filliforms were removed both kidneys were drained through the bladder and the urinous discharge gradually disappeared from the wound. There still was a slight amount of pus on the dressings and occasionally there would be some urinous discharge, but by the 10th of April the wound had almost entirely closed.

On the 13th of April the temperature and pulse shot up and there seemed to be swelling and distress over the kidney, indicating a blocking up of something. On inserting a probe considerable pus oozed out and he had immediate relief.

From April 20th to the 25th, the kidney was apparently drained entirely through the wound. On the 25th he voided from the bladder, with very highly-colored urine, about an ounce of thick creamy or caseous material, resembling thick pap, after which he voided urine normally and the wound closed at once.

The wound opened again on May 7th and drained the kidney until May 11th, when he again passed the caseous material, followed by immediate closing of the wound, which has not been opened since,—now over six months ago.

It was interesting to watch the return of the kidney to its normal condition. The microscopical appearance was especially interesting as it showed the gradual opening up of the individual tubules by the presence of hyaline casts, of red blood casts and of hyaline casts stained blue by the mythelene blue used in testing the patulency of the ureter. These, apparently, were casts of the entire trouble, some of them extending entirely across the field of the two-thirds inch lens. These were observed as late as six months after the operation. At present the urine contains a trace of albumen, some pus cells and a few hyaline casts.

As to the etiology of this condition I have reached no conclusions. It may have been the result of a congenital hydronephrosis. It may have resulted from tortion of the ureter

from floating kidney; there may have been occlusion of the ureter from uric acid infarct, or there may have been an acute pyelitis (described by Dr. Marcel Hartwig of Buffalo, in Berliner Klinische Wochenschrift, November 30, 1903), followed by occlusion of the ureter from the resulting detritus. The child has a slight phimosis, but I hardly think that sufficient to have caused the difficulty, except that it might have been a possible cause of the pyalitis.

The treatment following the operation was largely symptomatic. For the first week he was given enemeta of saltwater with stimulants. Urotropin, potassium acetate and Basham's mixture were tried, but none seemed so satisfactory as potassium citrate.

I am indebted to Dr. L. H. Taylor for valuable assistance in obtaining and translating several articles published abroad bearing on this case.

TWO CASES OF RABIES, BOTH FATAL.

BY DR. C. W. TRESSLER, SHICKSHINNY, PA.

READ NOVEMBER 15, 1905.

I have to report two cases of hydrophobia. Such cases are not nearly so frequent since the Pasteur treatment has come into use.

Case No. 1: George R., age 65, good family history, had been bitten by a dog, which had been injured on the railroad. The wound was a very small punctured one on the nose, and the patient did not pay any particular attention to it.

Just one month from the day he had the injury, he awoke in the morning, very nervous, slight headache, but nevertheless he came downstairs for breakfast, but complained of some difficulty in swallowing, especially his coffee. About 2 p. m. of the same day he began getting attacks, during which he tried to choke his wife, but as soon as the attack was passed he could talk quite rationally.

I was sent for at 4 p. M., found him in an almost nude condition, on his hands and knees, biting at the wood work on

the walls, while the saliva flowed quite freely from his mouth and had covered quite an area on the floor.

He was placed on a bed by force and the temperature was found to be 100 degrees, pulse 108 and not very strong. I brought a glass of water to him and each time at the sight of it he would be thrown into a spasm, during which time he thought some one was trying to kill him. All his reflexes were very much exaggerated and eyes very sensitive to light. The following day I found him very much prostrated, pulse 130, very weak, large quantities of saliva still coming from his mouth, and very quick to notice the least moving or hear the slightest noise; he gradually grew weaker until 7 p. m., when he died, just 48 hours from the first symptoms.

Case No. 2: D. K., age 11, good family history, no history of this patient being bitten by a dog, until after he had died.

I was called to see this case about six weeks following the other. Here the father claimed the boy had a sore throat and was very nervous. I called at the house at 7 p. m., found the patient very nervous, throat clear, no irritation or swelling, but he complained of a choking sensation. I tried to give him some medicine in a teaspoon. He took hold of the teaspoon with his teeth and he seemed unable to swallow. I then became suspicious, having just had the other case a few weeks before, so I took a glass of water and the sight of it threw him into a violent spasm and he kept continually striking at his throat.

His temperature was 99, pulse 96, not very strong.

The following morning I found him very excitable, and having a convulsive seizure each time he got sight of any liquid. His one ear, which he said was torn off by falling on a nail, became quite red and he seemed to have pain there.

Dr. Jones was called in consultation. The patient's reflexes were very much exaggerated and it took the combined force of two people to hold him in the bed, especially when these attacks would come on.

We both decided it was a case of rabies, and gave the family a very poor prognosis.

The patient gradually grew worse during the day and died at 1 a. m., about 38 hours after the first symptom appeared.

After he died we learned that he had been bitten in the ear by a stray dog about four months before.

The treatment in both these cases was practically the same.

Patient was kept in a dark room and as quiet as possible. Patient was not forced to take any food or drink by mouth. Between the attacks, bromides and chloral were given and morphine by hypodermic injection when he became violent. Large quantities of water by rectum with a nutritive enema about every four hours.

In neither of these cases had there been any preventative treatment and both cases had been bitten by a strange or stray dog.

Therefore, I think we should always be very strict to have all dog bites, especially by stray dogs, properly cared for as soon after the injury as possible.

VENESECTION, PHLEBOTOMY OR BLOOD-LETTING.

BY DR. D. G. ROBINHOLD, FORTY FORT, PA.

READ DECEMBER 6, 1905.

Venesection—meaning abstraction of blood by opening a vein, an operation so rarely practiced to-day that very many of our profession have never abstracted blood for therapeutic purposes, nor have ever seen it done by anybody else. Furthermore, it is to be feared that many of our younger physicians would hardly know how to bleed if called upon to do so at a crisis. All this is wrong, for bleeding is a measure undoubtedly of the greatest value and one which every physician may be called upon to resort to.

Like many therapeutic measures, it was sadly abused in the early part of this century and people were bled when taken ill. with the same regularity that they were put to bed.

More than four hundred years ago the barbers' craft was

dignified with the title of a profession, being conjoined with the art of surgery. The barber-surgeon, equipped with cupping glasses, the lancet and the leech, was an essential member of the medical profession. In France, the barber-surgeons were separated from the perruquiers, and incorporated as a distinct body in the reign of Louis the Fourteenth. In England, barbers first received incorporation from Edward Fourth in 1461. They were united with the company of surgeons, it being enacted that the barbers should confine themselves to the minor operations of blood-letting and drawing teeth, while the surgeons were prohibited from barbery or shaving. Then in 1745, barbers and surgeons were separated into distinct corporations. The striped pole symbolized the lather, the blood and blue ribbon, which encircled the arm in the operation of phlebotomy. We have the emblem with us to-day.

I believe that one of the principal reasons why blood-letting is not more commonly employed is owing to the lack of actual experience among our teachers and the enormous amount of medical literature which is published against the employment of this most useful and certain remedy in suitable cases. I believe firmly, and such has been my personal experience in the few cases in which I have employed this therapeutic measure, that nothing can take the place of blood-letting at the commencement of nearly all inflammatory affections, in sthenic, plethoric individuals. Since the use of veratrum viride has become more common, the conditions indicating venesection have been lost sight of, because this drug so dilates the blood-paths that a man is bled into his own blood-vessels.

Students seldom see a patient bled in any of our hospitals at the present day, and the laity have been educated to believe that our constitutions have so changed within the last half century that to bleed a patient now is, to say the least of it, very bad practice.

This is an age of sugar-coated pills, aromatic elixirs, lethean draughts and perfumed lotions.

I hope that within the next few years there will be found many more medical men carrying among their armamentaria, a

lancet, both clean and sharp, ready for emergencies, for I am a firm believer in venesection in suitable cases.

The indications for venesection are as clear and well defined as are the indications for any remedy. Briefly stated, we may say that all states of the circulatory apparatus denoting high arterial tension and excitement are indications for venesection.

First. For the relief of general or local congestion, especially in plethoric individuals.

Second. For the relief of pain, caused by pressure upon nerves by over-distened blood-vessels.

Third. For the relief of embarassed circulation, in emphysema characterized by urgent dyspnoea, lividity and venous engorgement.

Fourth. In arteriosclerosis, in cases with very high tension.

Fifth. In cerebral hemorrhage and softening when arterial tension is high, accompanied by an accentuated second sound and hypertrophy of the left ventricle.

Sixth. In cases of cardiac dilation from whatever cause, whether in mitral or aortic lesions or distention of the right ventricle in emphysema.

Seventh. In sunstroke, where the symptoms are those of intense asphyxia, and in which death may occur in a few moments. Free bleeding, under such conditions is said to have saved the life of Dr. Weir Mitchell when a young man.

Eighth. In cases of auto-intoxication it serves to throw out with the blood a certain amount of circulating poisons.

Typical examples indicating venesection are sthenic subjects suffering from pneumonia, pleurisy, meningitis and peritonitis, since all of them are accompanied by arterial excitement and characterized by local congestions, affecting the lungs, pleura, cerebral membranes and peritoneum.

While the contra-indications are weakness, low arterial tension and systemic or circulatory depression.

It is a remarkable fact, perfectly well known to old practitioners, and to which Sir James Paget has recently called attention, that the ill effects of the bleeding, in healthy sub-

jects, are very temporary and easily repaired. The blood globules, which are relatively more affected by bleeding than the other constituents of the blood, are quickly reproduced, and the functions of organs suddenly very much depressed soon recover their normal energy. That any permanent injury is done to the healthy human system by a moderate bleeding seems, therefore, to be highly improbable.

The effects of blood-letting on the composition of the blood are these: The water is increased and the globules, fibrin and salts are diminished in relative amounts, an artificial anemia is thus induced. The action of the heart becomes more rapid and its force lessened, the arterial tension falls, and the pulse assumes the dicrotic character. The functions of organs, especially of the brain and nervous system, lose energy. Nausea, vomiting, faintness, syncope and epileptoid seizures occur, when the loss of blood is considerable.

Before Louis' iconoclastic paper on bleeding in pneumonia it would have been regarded as almost criminal to treat a case without venesection.

Bleeding for the relief of headaches is far less resorted to now than formerly. Galen mentions its use in obstinate headaches, and in fact, nearly every writer on medicine, down to the beginning of the nineteenth century, commends blood-letting in headache.

Within the past two weeks I was called to see a stout, plethoric, heavy set woman, weighing about 180 pounds, and 52 years of age, who recently passed through the climacteric period, suffering from a severe attack of tonsilitis. She told me that she suffers very much with almost constant headaches and dizziness, and complained of her arms and legs feeling numb as though they were asleep at times. I at once suggested bleeding, which she very readily acceded to. I immediately bled her and abstracted about 30 oz. of blood and before I left the house she said she was entirely free from the headache and that her throat felt very much relieved.

Before the days of anæsthetics, obstinate and long standing dislocations were readily reduced after a free bleeding.

The results following the abstraction of a few ounces of blood from the unconscious victim suffering from puerpural convulsions is claimed to be almost a magic.

In the first stages of pneumonia, by the abstraction of blood, the vascular tension is lowered and the engorged area relieved. In the first place, the congested area is made up of relaxed blood-vessels, whereas the remaining blood-vessels of the body are tense, and, as a consequence, the blood is urged to the spot already engorged. In the second place, the abstraction of the blood from the tense blood-vessels renders the general pressure lower than that in the diseased area, and the congestion is relieved.

In apoplexy, the extravasation of blood into the brain causes great arterial excitement, as a general rule, and this in turn results in increased intracranial hemorrhage. Bleeding is, therefore, strongly indicated, not only to prevent inflammation but also to prevent further leakage into the brain substance.

Patients suffering from emphysema, if seen early, in a state of urgent dispnoea and lividity, with great engorgement of the veins, particularly if they are young and vigorous, should be bled freely.

In the "Lancet," July 25th, 1903, Sir James Paget narrates two cases of basal fracture, which he believes recovered as a result of venesection. These two cases have not much in common, except that in each of them recovery seemed to have been due to venesection. Here, in the last case, the evidence is incomplete, because pneumonia confused the issue; but it seems almost certain that the temporary improvement after the operation was due partly, if not wholly, to the loss of blood at the time, and that the improvement begun on the day of the venesection was due to the venesection and that alone. In the first case, a man, thirty-six hours after the fracture of the base, was profoundly unconscious, with a temperature rapidly rising to 104 degrees, and the intense degree of Cheyne-Stokes breathing. It was impossible to doubt that he was dying fast; but as soon as he was bled to 20 ounces plus 12 ounces, he began to get better, and made a complete recovery. It was nine days

before the cerebro-spinal fluid began to flow from the ear; this probably was due to the lowering of the blood pressure by venesection.

If venesection in cases of this kind could restore consciousness more or less for a few hours only, it would still be a valuable method. But these two cases seem to show that it may in this or that case, as it were by chance, bring about not mere temporary improvement, but recovery.

The operation for the performance of venesection is as follows: the requirements are a lancet or bistoury, a fillet or tape, an antiseptic pad and a bandage. A stick should be at hand for the patient to grasp.

The patient sits on a chair "with the arm abducted, extended and inclined outward." The parts are asepticized and the fillet is applied around the lower third of the arm, bringing it about three and one-half inches above the bend of the elbow, so that the return venous flow may be obstructed and the veins about the elbow made prominent, while not firmly enough to obstruct the arterial flow. The most prominent vein at the bend of the elbow is now selected. The median basilic vein, which is crossed by the internal cutaneous nerve and is parallel with and separate from the brachial artery by the bicipital fascia, is generally chosen, because if its greater prominence, and because being steadied by the underlying bicipital fascia.

The median cephalic vein, which is covered by skin and fascia alone rests upon the external cutaneous nerve is chosen and is also sometimes the more prominent. The surgeon stands to the right of the arm, holds the elbow with his left hand and steadies the vein by pressure of the left thumb just below the intended incision. The patient grasps a stick firmly and manipulates his fingers to distend the vein. The lancet or bistoury, with its back to the arm, is thrust through the skin over the vessel, and into the distended vein beneath and is made to cut its way upward and outward at a single stroke, calculating to sever, in an oblique direction, about two-thirds of the vein. Upon removing the thumb, the bleeding is allowed to continue until appraoaching faintness indicates a sufficient loss, when

the constriction is removed, the gauze pad placed over the wound, and a figure-of-eight bandage applied to the elbow. The arm is then placed in a sling for a few days. Should the bleeding continue, the vein is to be entirely severed and the wound may even be enlarged and the vessel doubly ligated.

The internal saphenous vein is sometimes selected for this operation.

I have endeavored simply to point out a few of the more prominent diseases in which, in my humble opinion, this much neglected, yes, I dare say ignored, but most valuable therapeutic agent may be advantageously employed.

Try it, gentlemen, do not condemn a practice because it is old, but "prove all things, and hold fast that which is good."

DISCUSSION.

Dr. T. A. James: "I have listened with interest to Dr. Robinhold's paper. Phlebotomv is like all therapeutic agents; it has been abused. It has been my pleasure to hold the basin for my father and to be spattered with blood. I question the benefit in rupture of the blood vessels of the brain after the clot has formed. In puerpural convulsions we get good results, when the patient is plethoric, but in anaemic people, we get no benefit. In the dropsical cases it must be done. I have often bled patients for headache and I have done it in pneumonia."

Dr. Wycoff: "In speaking of bleeding, I have often seen it done in cases of eclampsia with good results. Salt solution being used to replace the blood drawn."

Dr. Stackhouse: "I have lately seen a woman with a bad heart, who was threatened with oedema of the lungs. She was expectorating some frothy blood; stimulants seemed to help for a short while. I then opened a vein, and drew off fifteen to twenty ounces of blood. She began to regain consciousness and get better."

Dr. Guthrie: "I did not hear the paper or the discussion. I have not bled a patient for several years. I have done so in years gone by. I have seen relief from the pain of pneumonia and pleurisy result from it. I think this relief from pain has been its recommendation in the past. I have had good results

from it in eclampsia. I have done it in apoplexy and it did not do much good. I think it is a good thing in plethoric people as a prophylactic. We have now a better agent, veratrum viride. It is one of the best preparations in the whole pharmocopoea. I depend on it rather than on bleeding, but bleeding has its field."

Dr. Taylor: I never had much experience in general blood-letting, but in local, my experience has been considerable. I never saw it practiced in the University. I went to the mountain once with Dr. Guthrie and saw a young man who was unconscious. I, like Dr. James, held the basin and got well spattered up. The man soon regained consciousness. I believe that blood-letting is a good thing in iritis, and mastoid disease. I have seen a case of mastoid disease aborted with the application of leeches, though many people hold opinion to the contrary. I have used it in hemorrhage in the eye, but it does not do the good that it does in iritis."

Dr. Robinhold in conclusion: "Dr. Guthrie said that it relieves the pain in pneumonia. I went to see a Polander, who demanded bleeding. I bled him and the dyspnoea left him immediately. I have done it in several cases and believe it shortened the attack."

INTRICACIES IN THE DIAGNOSIS OF APPENDICITIS.

BY ERNEST LAPLACE, M. D., LL. D., PROFFESSOR OF SURGERY,
MEDICO-CHIRURGICAL COLLEGE, PHILADELPHIA.

READ DECEMBER 20, 1905.

The vast amount of literature on etiology and diagnosis of appendicitis would seem sufficient to meet the requirements of the profession, were it not that experience constantly emphasizes the fact that the diagnosis of appendicitis, if it is to be based upon a definite set of clinical phenomena, remains as obscure and uncertain as ever.

That we still have deaths from appendicitis following upon operations performed too late, is a sufficient fact and striking argument to prove that not until a positive diagnosis can be made at so early a date as to preclude the possibility of a fatal result, can we consider the question as settled.

No abdominal disturbance can assume a character less determined. From violent right inguinal pain with a chill and high temperature, with abdominal rigidity, constipation and nausea, to a mere soreness, slight rigidity and scarcely any elevation of temperature, seem two extremes widely apart; and still appendicitis in its most virulent form may exist under all these conditions.

Is it a wonder, therefore, that those who have not the opportunity of operating upon a large number of cases, may sometimes fail to realize the gravity of the situation?

Within the last few years, leucocytosis as an evidence of a serious inflammatory condition, offered hope for a more precise scientific diagnosis. The procedure, however, has not materialized any precise or definite advance. A fulminating case of appendicitis may develop so rapidly as to preclude the possibility of a leucocytic count, because of the remoteness of the patient from such laboratory facilities. Secondly, the leucocytic count, while sometimes an indication of a purulent manifestation, is very frequently negative in its revelation of the true condition of sepsis that may be developing.

Leucocytosis results from the absorption of the toxin of the developing infection when it is of a highly irritating character; so that on entering the general system, there is found an excessive number of white blood corpuscles in the peripheral circulation, hastening as it were, to remedy and destroy the developing local irritation about the appendix.

Were the staphylococcus and streptococcus the only infectious elements in the causation of appendicitis, the reactionary leucocytosis would be present in every case; for inasmuch as these toxins are highly irritant, the leucocytosis would be a fair index of the gravity of the situation, and therefore a warning as to the proper time to interfere surgically. But this is not the condition of things; in fact the pure staphylococcic invasion of the appendix is rather the exception than the rule.

The bacillus coli and the saprogenic germs of the intestines seem to be the organisms, which, in the vast majority of instances, start the inflammation within or about the appendix.

Now, we know that while these two organisms are highly infectious, quickly produce gangrene, and subsequently allow secondary infection of the staphylococcus, their toxines when absorbed into the circulation are non-irritant, though highly septic. As a result, an infection of low degree may take place about the appendix,—non-inflammatory in character in this, that the symptoms of acute inflammation may be absent, but the infection is so rapid and virulent as to result in a local gangrene within a short time.

Under these circumstances, the general economy has not felt the effect of the local irritation, and therefore has not responded as it would have done had it been highly irritated by the toxin absorbed from the parts; therefore, leucocytosis is absent. Meanwhile, local gangrene is going on.

We know that fever occurs always as the result of an irritant affecting the central nervous system. It may result from a direct traumatism, as the nervous or surgical aseptic fever, occurring directly after an operation, especially in the young or in very nervous persons; it may be a mere traumatism has upset the condition of the nervous system. In this

particular case, within an hour after the operation, the temperature rises very materially and remains high until the system has again regained its equilibrium. Here, a mechanical irritation is the cause.

On the other hand, it is possible to produce fever by the injection of a chemical within the body, which would irritate the central nervous system. For instance, if ten drops of a compound tincture of iodine is injected under the skin, the patient may soon have a chill, and the temperature will rise and maintain itself for a certain time until this chemical be eliminated from the body. Within twenty-four hours, the temperature will be again near normal; if the dose be repeated, a similar result will follow.

Here the chemical which has been introduced is comparatively harmless in itself, but highly irritant to the nervous system, and produces a disturbance of equilibrium in the thermogenic centres, resulting in fever.

Again many a poison may be injected into the body which would be non-irritant to the nervous system in this, that no fever would result, but it would be so poisonous that it would destroy life; such as morphia, strychnia, cyanide of potassium, etc.

What I wish to emphasize is, that an irritating, fever-producing chemical or toxin, is not necessarily poisonous in a life-destroying sense; whereas a chemical or toxin that is not irritating and causing no fever may be fatal in its results upon the body.

This explains an apparently contradictory condition of things, where, on opening an abdomen while operating on a case of appendicitis, the appendix may sometimes be found to be slightly affected, although there has been high fever; and on the contrary, cases of gangrene may be found where the temperature may have been but slightly altered.

Leucocytosis, in the first instance where irritation and fever is present, will exist; whereas, in the toxic conditions which are not accompanied by the evidences of irritation, leucocytosis will not exist.

If, therefore, we are asked to express our appreciation of leucocytosis as an adjuvant in the diagnosis of appendicitis, I will say that it is markedly present only in so far as an irritating toxin is being absorbed.

This irritating toxin may be the evidence of an acute inflammatory and suppurative process. In this instance, a marked leucocytosis is a signal of danger. A suppurative process, if more slow in character and therefore less acute, may have time to surround itself by fibrous tissue, and as the process develops being retained within a capsule as it were, there is less absorption of toxines and therefore less leucocytosis.

Here, leucocytosis may be slight or absent, although an extensive suppurative process may exist. An abcess of serious character may also exist ready to burst at the spot of least resistance, to be soon followed by general peritonitis; and still, owing to its isolation and lack of reaction, sufficient toxins are not absorbed in the general system to give the danger signal through leucocytosis.

Shall we therefore abandon the leucocytic count in diagnosing appendicitis? Many surgeons have been open in their avowal of its unreliability, and therefore that it should be abandoned. I believe that this is an extreme view of the situation.

I have said enough to show that by itself, leucocytosis can not establish the diagnosis of the presence or absence of an infection. It is, however, well to know in every case when possible, what the leucocyte count is; it should be recorded clinically. This will help us to the better understanding of the case, and may contribute as such in our final conclusions when all the other phenomena of the case are considered with a view to a definite opinion. Therefore, take the leucocyte count when possible, and record it.

The temperature attending the developing appendicitis is also a source of constant discussion. It varies likewise according to the nature of the toxin, and therefore according to the nature of the organism whose development preponderates in the given case. While an elevated temperature indicates an acute

inflammation, some of the most virulent and foulest infections are accompanied by a normal or sub-normal temperature.

We all know the sub-normal temperature in profound sapremia. Who can deny its fatal consequences? Temperature therefore is valuable in the diagnosis in exactly the same ratio and to the same extent and in the same light as leucocytosis.

The pulse, by which the practitioner by custom and by tradition feels that he can read more clearly than in any other way the true condition of the patient, is just as deceptive as leucocytosis and temperature.

A strong and bounding pulse, rapid in character, and accompanied by fever, is an indication of the stimulating effect of an irritating toxin that is absorbed. A rapid and small pulse will indicate the absorption of a toxin that is depressant; such as occurs from saprogenic infection. This, however, can only be marked when the infection exists to a great degree.

There are conditions—and these most deceptive—where the pulse is normal, and hence the patient is supposed to be but lightly disturbed. This apparently normal pulse is to be analyzed, as it were. We see by the temperature, pain, and by the general condition of the patient, that a disturbance is going on within the abdomen; and still the pulse is normal, or nearly so.

It is, in my judgment, the direct result of the absorption of toxins of the two distinct infectious elements—one which stimulates, and one which depresses. A mixed infection having taken place, two toxins, one of a stimulating and another of a depressing character are absorbed at once; the result is a pathological tug of war upon the innervation of the heart, followed by an apparently normal pulse—but in reality, a very pathological pulse.

The element of pain is really the most constant one in the diagnosis of appendicitis. All irritants produce pain, but some more markedly than others. Some irritants produce pain increasingly as the irritant develops. This takes place notably in the staphylococcic infection. This toxin we have already observed produces fever, accelerates the pulse and increases

leucocytosis; in such an infection, pain existing from the first becomes notably more marked. Not so, however, with the other infections. At the start, pain becomes noticeable, perhaps increases, and then, as though the pathological condition were decreasing or entirely disappearing, the pain decreases and even ceases.

This, however, should not be construed as an indication that the course of the appendicitis is at all retrograding; under such conditions it is possible that the pathological condition present, though giving less pain, or even no pain, be still progressing towards a general gangrene. It is difficult for us to realize the truth of this assertion, and it is almost exasperating when we are asked to believe it, still we can produce a striking experimental example of the same condition; for instance:

I know a young lady, daughter of a distinguished family in a southern city, who, on suffering with a bone felon of the index finger of the right hand, was told by one of her schoolmates to dip the finger in carbolic acid when the pain would be relieved. This she did, and the anaesthesia following upon the application of the pure acid relieved the pain. She continued this treatment, soaking the finger in the pure carbolic acid over night. Though entirely free from pain, having no fever and no acceleration of the pulse, the finger was found to be absolutely gangrenous the next morning and required amputation.

Here is an example of a violent irritant acting most fatally upon the life of the tissues without causing pain, temperature or acceleration of pulse.

Should we then wonder that a toxin could be produced within the appendix from the virulent saprogenic germs, whose result upon the poorly nourished appendix would be similar to so much pure carbolic acid, producing a gangrenous appendix, free from the effects of a general irritation?

I am thoroughly convinced of similar conditions within the appendix, and only in this way can I explain the cases which I have time and again been called upon to operate after the patient assured me that he was now free from pain and

bearing a normal temperature; and where the consultant himself would avow that for the past few days the patient had pain—but now the attack seemed over, pain having disappeared and the temperature having become practically normal.

These cases, which, as it were, seem to smoulder for a while, may progress so rapidly as to affect the peritoneum and set up a new stage of infection—that of infectious peritonitis, followed by a fatal termination.

Muscular rigidity over the seat of the appendix and its neighborhood, more or less marked, as compared with the rigidity of the left side, has been asserted by many as being perhaps the only unerring symptom of an inflammatory condition beneath. I will admit that it is a valuable symptom, but a deep-seated inflammatory condition may also exist without it.

In the majority of instances of appendicitis, the ileocaecal region with the appendix lies in direct proximity to the peritoneum, and according to the rapidity of the inflammatory condition, the appendix adheres as best it can to some neighboring structure, bending above, below, the inner or outer side as the case may be; but when the process goes into a more serious condition, it is fair to suppose that the parietal peritoneum sooner or later will become united by inflammatory processes, and hence will betray results of irritation. This irritation may be accompanied by much pain or very little pain, as the case may be; but at all events, if the parietal peritoneum be irritated, the irritation will find a reflex expression in the contraction of the muscles of the abdominal wall. This is the rigidity in question.

It stands to reason, however, that should the pathological element be of an infectious character, but not highly irritating, and furthermore, should this infectious element develop in such a way as to take a downward course, that is, away from the parietal peritoneum, the chances are brought to a minimum that any expression of this irritation be manifested by a reflex contraction of the abdominal wall on that side; and therefore, we can expect muscular rigidity to be absent.

It is fair to assume that sooner or later the infection will

eventually find its way towards the parietal peritoneum, and result in the contraction of the abdominal wall; but in this special class of cases, it is just as fair to suppose that the irritation will have reached the opposite side, and produced a similar amount of contraction. Hence the inability of the surgeon to distinguish, by comparison, the value of the muscular rigidity inasmuch as both sides are rigid, to practically the same extent.

Constipation has been reckoned as a valuable symptom. Indeed, it is only relative, as a symptom. Constipation and the resulting abdominal tympany are simply the result of intestinal paresis, or arrest of peristalsis. That this should occur, so much pain or so much infection must already have occurred, as to result in the reflex action of the sympathetic system, whereby the normal peristalsis is lessened or arrested.

By this time, matters are already quite serious, and the infection has already taken considerable headway. In the very initial stages of the process, the irritant that starts the inflammatory process within or about the appendix, also exists to some extent about the ileocaecal region. Cases are very frequent where an acute enteritis exists, and following upon this, a clear case of appendicitis.

Constipation as an obstinate symptom is therefore serious, and indicates an already advanced development of the inflammatory process about the right inguinal region. We should not, however, wait for its appearance; but should it appear, we ought to know how to recognize its significance.

Finally, the anatomical situation of the appendix is not at all constant. The McBurney point, midway between the anterior superior spinous process of the ilium and the umbilicus, is supposed to be the spot covering the normal location of the appendix, and therefore the spot where the maximum pain is to be elicited on deep pressure. Were this invariably true, the complexity of the subject would be somewhat simplified. But the truth is, that the location of the appendix is variable.

While I grant that it is usually in the McBurney location, it has been found above as high as the undersurface of the liver,—

below, as deep as the rectal cul de sac, and in the scrotum itself—while its location on the left side is by no means a rarity.

Shall we therefore eliminate appendicitis as a diagnosis because the pain is found elsewhere than the right iliac region? The frequency of this abnormal situation of the appendix is such that we must take serious cognizance of the fact, so that it be no longer an excuse for an erroneous, or too tardy a diagnosis.

From what has been said, should I be judged as an iconoclast in the matter of diagnosis of appendicitis, destroying what has been commonly accepted as sufficiently reliable diagnostic symptoms, and offering nothing as a substitute for the physician's guidance? I am not prepared to answer this. I have only stated facts, based unfortunately on cases, where these facts having been unrecognized or ignored, this treacherous disease went on relentlessly to a fatal termination.

There has not been a word of theory, but bare facts, which it is my duty to make known as I have observed them, out of an experience of a thousand cases which I have so far operated upon in sixteen years.

I believe it is possible to bring down the mortality in cases of appendicitis to one-half of one per cent. This allowance of one-half of one per cent. is for the mortality, attributable to extraneous causes in operations for appendicitis—such as the anaesthetic, heart, lung and kidney complications, which may follow the operation. From the appendicitis properly, the mortality should be nothing.

To reach this desirable result, the operative treatment is the only one that should be considered. It is the only one that offers a sure recovery in all cases, when undertaken in time; that is, before a relentless infection has gone beyond the possibility of its complete removal by the knife.

If we aim toward saving all our patients, and not merely a certain proportion of them, the operation—the early operation, and this alone, is the means of securing the result. And why?

Enough has been said above as the many reasons why a positive early diagnosis baffles us in many cases.

The medical treatment as at present understood and practiced, exercises no direct influence upon the course of the disease, once genuine inflammation has started in the appendix. It is indicated and achieves results only in the pre-inflammatory stage of appendiceal irritation. When, however, genuine inflammation has started, and suppuration or gangrene have set in, medical treatment is but masterly inactivity and professional capitulation to the disease itself, leaving nature, not the human intellect, in charge of the situation.

It behooves the profession, therefore, to recognize first, a stage of irritation, or pre-inflammatory stage of appendicitis; second, to relieve this condition as promptly as possible by medical measures; third, failing to do this, to remove the appendix promptly, before it has become inflamed to a suppurative or gangrenous condition by the action of the irritant.

The stage of appendiceal irritation or pre-inflammatory stage of the appendix may be recognized as follows: A sudden or slowly developing pain in the abdomen, persistent in character, generally in the right inguinal region, though it may occur elsewhere. In a short while, it becomes aggravated. The cause of this pain is either within the intestine, or locked up within the appendix. This is the stage of irritation. Fever may be present or not. Constipation may be present or not. Rigidity of the abdominal wall may be present or not. But what is certain, is that a sharp purgative, such as magnesium sulphate, which will cause evacuations, should remove the irritation and relieve the condition, if the offensive cause is within the gut. An ice bag applied over the seat of the pain should materially assist in subduing the irritation.

If in spite of these medical measures, followed by evacuations, the pain is not subdued, or having been lessened for a while, or having disappeared it again returns, *then*, we must justly conclude that this persistent and violent irritant is not in the intestine, but elsewhere; that is, in the appendix, which is so closed or swollen somewhere in its course, or at its

union with the caecum, as to prevent the drainage of the irritating substance into the caecum. The infectious material is therefore beyond the reach of the cleansing measures, and must continue its nefarious work. Should later this stop short of suppuration or gangrene, I can not see how any medical measure can lay claim to have arrested the process, for I fail to see how any medical measure could reach it. It is the *vis medicatrix* that works sucessfully in this case. Experience tells us that it works successfully only in sixty to seventy per cent. of cases of first attacks. No statistics can be made on its successful cure on second attacks. On the contrary, we know that the more frequent the attacks, the more virulent they become from the diminished resistance of the parts, which have become deformed by the adhesions, and materially lessened in vitality.

There exists no way of ascertaining, *a priori*, that a given case will thus be successfully taken care of by nature. Most physicians devoutly and tremulously hope for it.

Only last week was just such a case. A boy of seventeen, in his first attack, after four days of medical treatment, when purgation on the first day had failed to relieve his symptoms, was brought to me for operation, but too late. Fulminating peritonitis had already set in, and death ensued before an operation could be resorted to as a last chance. There was no pain, the temperature was normal, but the pulse weak.

Gentlemen, the next *first attack,* in any of your patients may turn out like the above, in spite of the fact that you may have repeatedly tided other patients over their first attack. But who knows? The proportion is sixty to seventy per cent. Will your next patient with his first attack be among the unlucky forty to thirty per cent. who are apt to die from their first attack if not operated upon in time?

Let us unite in a common effort to reduce the mortality of appendicitis to a minimum. We know that the removal of the appendix is a harmless surgical procedure, provided suppuration or gangrene does not already exist.

I have explained our utter inability to accurately and infallibly ascertain the nature and degree of an infectious process

about the appendix in the depths of the abdominal cavity by clinical or laboratory measures. I have shown you, how, on the general principle that prevention is better than cure—it is better to remove an appendix before it has time to suppurate and become gangrenous, than to wait for the uncertain help of nature's processes.

You know the harmlessness of the operation in the stage of irritation. Therefore, let us teach the people this truth, and *promise a patient* a certain cure if the operation be performed during the pre-inflammatory stage. The results will sustain your promise. There being fewer fatalities from the operation it will lose its dread, and patients will no longer hesitate to submit.

Preventive surgery will then have conquered a most insidious and treacherous foe—a consummation speedily to be desired.

REPORT OF THE LIBRARY COMMITTEE.

WILKES-BARRE, PA., December 20, 1905.

Members of the Luzerne County Medical Society:

Your Library Committee respectfully report for the year 1905 as follows: There have been fewer accessions to the library proper than for any previous year since we have occupied these rooms.

Our total number of bound volumes to date is 3494, being an increase of 86 volumes over the number reported last December. The librarian has recently selected over a hundred volumes at the New York Academy of Medicine and at the Library Exchange at the Kings County Medical Society in Brooklyn. These will be added early in 1906. The accessions during the year consist mainly of 1904 periodicals which were bound in 1905, and of donations by authors and others. Very little of the fund appropriated for new books has been used during 1905.

Our thanks are due to Drs. Davis, Guthrie, Long, Buckman, Miner, Fell, Shoemaker, Smith, Gibson, Lazarus and Taylor of our own society, for contributions of current periodicals. Also to Mr. J. W. Raeder, Drs. M. B. Crarey, F. Corss, Charles H. Miner, Benjamin Lee, Charles Frazier, Jas. E. Pilcher, Charles McIntire, Guy Hinsdale, J. E. Newcombe, Geo. M. Gould, Geo. M. Edebohls and G. D. Hersey for special contributions.

Also to the American Surgical Association, American Laryngological Society, Pittsburg Academy of Medicine, New York Academy of Medicine, College of Physicians of Philadelphia, Kings County Medical Society, New York; U. S. Marine Hospital, R. I. Medical Society, Massachusetts Medical Society, State Board of Health of New Jersey, and to numerous publishers who have donated their journals through the Library Exchange.

The library has been used more during the past year probably than ever before, and the time is rapidly approaching when

the presence of an assistant in the rooms at regular hours will be a necessity,—one who can assist members in finding at once the material sought for.

The transactions have been published as usual and sent to the usual list of libraries and to our own members. There have been a number of requests for these transactions and for back volumes as well.

We would recommend that the necessary amount for binding periodicals be appropriated and the usual amount, $50.00, for the purchase of new books. Also that the Library Committee be authorized to draw the unexpended appropriations for new books, to be used either for books or bound periodicals if, in their judgment, such expenditure should seem advisable.

Respectfully submitted,

LEWIS H. TAYLOR,
MARIS GIBSON,
WM. W. LAZARUS,
Committee.

VITAL STATISTICS OF WILKES-BARRE.

BY F. C. JOHNSON, M. D.

For the twelve months ending November 30, 1905, there were 868 deaths in Wilkes-Barre—77 less than in the preceding year, which latter showed the largest total on record. The last ten years' average is 796, so that 1905 shows 73 in excess of the average. The 1905 mortality rate based on a population of 53,000 is 16.4. It is unfortunate that there is no adequate system of reporting deaths to the city clerk. The cause of death is too often given as dropsy or heart failure or some such general term.

As usual pneumonia led the mortuary procession with 100 deaths, as against 121 in the preceding year. For ten years the 100 mark has been reached only three times.

There were 87 deaths due to accident, as against 100 in the preceding year, but to this might properly be added five suicides. The 100 mark of 1904 has not been reached in any other year's record of accidents.

Heart disease had 59 deaths, not an unusual number. The previous year's total, 87, was the highest on record.

Apoplexy had 41 cases—the highest on record.

Consumption, 37, was considerably below the average. In preceding year, 62.

Cancer, 34 deaths, highest on record, as aginst 12, lowest on record, in preceding year, was almost double the average for nine years. The average deaths for last five years was 22, and for the preceding five years was 19.

Cholera infantum had thirty little victims, about the usual number.

Appendicitis is charged with 5 deaths, which is about the average.

Croup had 4 deaths, as against 14 in preceding year, an aver- of 9 for ten years.

Diphtheria had 100 less cases than in preceding year and 8 deaths as against 26 year preceding. The table shows a great

reduction since 1895, when there were 88 deaths, and in 1892, when there were 130 deaths. For the last ten years, under antitoxin, the deaths from diphtheria have averaged 18, while for the five years preceding use of antitoxin, the deaths averaged 80 per year.

Typhoid fever—8 deaths, against an average of 15 for period of ten years. The seeming high mortality shown by the table is due to the fact that while all deaths are reported, probably not more than half the cases are reported. Negligence to report cases makes a bad showing, as the mortality is made to appear at least twice what it really is.

Scarlet fever showed as many cases as in 1904, but with less than half the deaths—a very gratifying showing, particularly as compared with 1899-1903, when there were two to four hundred cases annually.

Measles had 228 cases and no deaths. In eleven years there have been reported 1992 cases of measles and only 9 deaths. As showing the fluctuating character of measles, only one case was reported, while in 1901 there were 507 cases reported. There are doubtless many unreported cases.

Grip had two victims, about the average number.

Meningitis had 16 deaths, as against 26 the preceding year. The average for seven years is 19.

Paralysis, 18, against an average of 10.

Cause of Death.	December, 1904	January, 1905	February	March	April	May	June	July	August	September	October	November	Totals, 1905	Totals, 1904	Totals, 1903	Totals, 1902	Totals, 1901	Totals, 1900	Totals, 1899	Totals, 1898	Totals, 1897	Totals, 1896
Accident	4	8	5	9	15	3	9	7	9	10	6	2	87	100	74	44	64	57	64	48	61	78
Appendicitis	—	—	2	—	—	—	1	—	—	2	—	—	5	6	5	6	4	1	3	6	2	1
Apoplexy	2	3	7	5	2	4	6	5	3	1	—	3	41	25	27	20	30	23	19	19	18	16
Blood Poisoning	1	3	1	1	—	2	1	3	—	2	—	—	14	3	13	11	3	14	10	6	11	6
Brain Disease	1	1	—	1	—	2	2	2	—	—	1	1	11	13	1	8	3	5	19	3	33	18
Bronchitis	—	1	1	1	2	1	3	—	—	—	—	—	9	10	11	12	15	20	24	28	24	10
Convulsions	2	4	—	3	4	4	3	5	1	1	1	—	28	27	25	33	28	47	32	39	37	32
Cancer	4	—	4	2	3	1	4	2	4	3	5	2	34	12	14	31	19	27	22	15	10	14
Croup	—	1	1	1	—	—	—	—	1	—	—	—	4	14	7	8	4	4	11	8	15	14
Cholera Infantum	—	—	—	—	—	—	—	19	6	1	2	2	30	32	24	38	30	37	33	50	31	38
Consumption	6	4	1	3	3	2	2	2	2	4	5	3	37	62	49	28	46	51	44	47	34	12
Colitis and Enteritis	1	—	—	—	—	—	1	6	4	—	—	—	12	13	11	14	16	22	13	17	20	20
Diarrhœa	—	—	—	—	—	—	—	2	1	—	—	1	4	8	4	10	5	9	5	7	4	13
Diphtheria	2	2	4	—	—	—	—	1	—	—	1	—	10	26	13	17	15	19	8	16	26	36
General Debility	5	2	4	3	—	2	1	3	4	3	2	3	32	28	32	31	34	41	39	44	35	27
Grip	—	—	1	—	—	—	—	—	—	—	1	—	2	3	6	—	7	8	9	2	3	—
Heart Disease	5	10	3	3	2	3	6	7	4	5	6	5	59	87	66	76	59	55	44	46	61	43
Hemorrhage	—	—	—	—	1	—	—	—	—	1	—	2	4	3	5	4	10	—	5	8	8	7
Kidney Disease	4	1	4	3	5	8	2	4	4	4	3	4	45	47	47	30	39	22	34	22	31	20
Liver Disease	2	—	3	—	2	2	2	—	—	—	2	2	15	5	8	8	6	9	6	9	7	11
Meningitis	—	3	3	3	3	—	—	1	—	3	—	—	16	26	18	14	11	23	17	20	—	—
Paralysis	2	—	—	2	2	1	—	1	4	1	3	2	18	16	10	12	8	7	7	8	10	10
Peritonitis	1	2	1	—	3	2	2	1	2	1	1	—	16	27	21	7	18	11	9	18	13	17
Pneumonia	10	10	16	17	15	6	7	2	1	3	6	7	100	121	89	73	95	86	109	83	97	73
Still Born	7	9	7	6	6	5	10	6	4	2	17	10	89	55	67	60	69	51	57	50	79	75
Scarlet Fever	—	1	1	—	—	—	—	—	—	—	1	—	3	8	18	14	9	7	3	1	12	2
Stomach Disease	—	1	1	—	—	—	—	3	1	1	1	1	9	14	11	6	8	6	10	7	6	4
Tumor	—	—	1	—	1	—	—	2	—	—	1	1	6	3	3	1	3	5	2	3	2	3
Typhoid Fever	—	1	—	—	—	1	—	2	—	2	—	2	8	11	14	6	18	16	15	19	15	24
Weakness	1	4	1	2	3	2	3	3	9	3	1	2	34	43	33	29	39	45	22	8	19	40
Other Diseases*	9	4	1	7	10	7	8	5	10	11	10	4	86	97	93	77	78	73	50	59	62	51
Totals by Months	69	75	73	72	82	58	73	94	74	64	76	58	868	945	819	734	793	801	745	716	792	744

*Other diseases, not included in the classification above, but included in the totals, are as follows: Abscess of the lung 2, aneurism 1, arteriosclerosis 3, asthma 12, acute alcoholism 1, atelectasis 2, Addison's disease 1, confinement 6, complication of diseases 6, cramps 1, cerebral embolism 1, diabetic coma 1, exhaustion 1, erysipelas 1, gangrene 2, gallstones 1, inflammation of the pharynx 1, inflammation of the bowels 3, intestinal obstruction 5, laryngitis 1, lockjaw 2, malnutrition 6, malarial fever 1, nervous prostration 1, ovarian cyst 1, pleurisy 2, pemphigus 1, rupture of blood vessel 1, suicide 5, spinal bifida 2, suppressed circulation 1, shock 8, sunstroke 2, vomiting 1.

CONTAGIOUS DISEASES.

	Diphtheria.		*Typhoid Fever.*		*Scarlet Fever.*		*Measles.*	
	Cases.	*Deaths.*	*Cases.*	*Deaths.*	*Cases.*	*Deaths.*	*Cases.*	*Deaths.*
December, 1904 . .	41	2	0	0	15	0	0	0
January, 1905 . . .	51	2	3	1	11	1	9	0
February	24	4	1	0	10	1	31	0
March	14	0	0	0	18	0	46	0
April	13	0	2	0	14	0	59	0
May	13	0	6	1	13	0	48	0
June	8	0	1	0	12	0	27	0
July	4	1	6	2	12	0	2	0
August	9	0	3	0	12	0	1	0
September	12	0	8	2	10	0	0	0
October	16	1	12	0	26	1	1	0
November	12	0	16	2	13	0	4	0
Totals 1905	217	10	58	8	166	8	228	0
Totals 1904	316	26	36	11	88	8	391	3
Totals 1903	182	13	57	14	205	18	185	2
Totals 1902	162	17	34	6	409	14	60	6
Totals 1901	86	15	85	18	227	9	507	3
Totals 1900	140	19	61	16	198	7	49	0
Totals 1899	166	8	48	15	223	3	144	1
Totals 1898	160	16	84	19	88	1	1	0
Totals 1897	169	26	58	15	69	12	229	0
Totals 1896	266	36	145	24	51	2	14	0
Totals 1895	299	88	77	21	70	4	15	0
Totals 1894	—	82	—	21	—	1	—	7
Totals 1893	—	52	—	16	—	—	—	5
Totals 1892	—	130	—	21	—	23	—	0
Totals 1891	—	49	—	9	—	30	—	0

During the year 1905 there were six cases of cerebro-spinal meningitis, two in April, two in May, one each in June and July, all but one fatal.

In the years 1891–1894, as given above, the contagious disease cases were not reported to the city clerk, only the deaths.

BIRTHS IN WILKES-BARRE.

	Males.	*Females.*	*White.*	*Colored.*	*Totals.*
December, 1904	52	45	95	2	97
January, 1905	40	32	71	1	72
February	44	39	82	1	83
March	62	50	109	3	112
April	51	54	105	0	105
May	58	42	100	0	100
June	56	46	101	1	102
July	57	51	108	0	108
August	52	41	92	1	93
September	47	45	91	1	92
October	57	48	104	1	105
November	47	48	95	0	95
	623	541	1153	11	1164

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TRANSACTIONS

OF THE

Luzerne County Medical Society

FOR THE

Year Ending December 31st

1906

VOLUME XIV

TRANSACTIONS

OF THE

Luzerne County, Pa., Medical Society,

FOR THE

Year Ending December 31, 1906.

VOLUME XIV.

ORGANIZED MARCH, 1861.

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ADDRESS OF THE RETIRING PRESIDENT.

BY DR. OLIN F. HARVEY, WILKES-BARRE, PA.

READ JANUARY 10, 1906.

Gentlemen of the Luzerne County Medical Society:

Following in the footsteps of a long line of predecessors in the office of President of this Society, I have to-night accomplished the journey on which I set out, at your behest, about a twelvemonth ago. For some time I have been cognizant of the fact that, at the end of this journey, there was to be performed by me a duty which, in all respects, would be more irksome, more depressing and less satisfactory than anything I had attempted to do while progressing hitherward. And yet, now that the moment for the performance of this duty has arrived, I must say that, after all, I am glad of the opportunity thus afforded me in which to formally and, in a manner, publicly, congratulate this Society on its successful life and healthy growth during the past year.

I doubt if there are many medical societies in the country—certainly there are not more than two or three in Pennsylvania—whose members habitually and steadily display more enthusiasm, zeal and earnest effort than the members of this Society evince in maintaining the high character and usefulness of the organization to which they owe fealty.

The faithful working members of this Society certainly deserve sincere congratulations for their persistent efforts not only to keep themselves steadily abreast of the progress of Medical Science, but to drag along with them their less industrious brethren of the profession in this community.

Probably no one of the professions has made more progress in the nineteenth century, or stands in a more advanced position at the beginning of the twentieth century, than that of medicine. Many ills which have been handed down from one generation to another as long as there is any record of man in the world are still our heritage, it is true, whilst new

ailments are developed in the feverish atmosphere of our modern life. Nevertheless, it is impossible for any competent observer to deny that medicine moves onward almost from day to day. As the observation of nature has extended, and as mankind have approached the state of only semi-barbarism in which they now exist, there has been an improvement. The Materia Medica has been weeded; much that was worthless and revolting has been thrown overboard; simplicity has been introduced into prescriptions, and the whole business of drugging the sick has undergone a salutary reform. The great fact has been practically recognized that the movements of life in disease obey laws which, under the circumstances, are on the whole salutary, and only require a limited and occasional interference by any special disturbing agents.

The modern doctor dates only from the reign of Henry Eighth of England, when the College of Physicians in England was founded, as a body corporate by letters patent in the tenth year of the reign. This grant was in response to a petition from a few of the most notable members of the profession, resident in London, who were perhaps moved by both a laudable zeal in the interest of science, and a compassion for the sufferings of the subjects of astrological and toxicological experiments.

Tradition and immemorial usage governed medicine as well as theology in the Middle Ages and to introduce what was new was to incur the penalty of death. In the sixteenth century, a clever writer, speaking of the physicians of that time, said, what happily is true of but a very small fraction in our time: "Wellnigh always there is more danger from the physician and the medicine than from the sickness itself. Physicians have one common honor with the hangman—to kill men and to be recompensed therefore."

It is not much more than a hundred years now since a naval surgeon on board a British man-of-war had a very simple method of treatment for his patients. He would tie a piece of tape around the waist of the complaining man-o'-war's-man and command him to declare whether his pain existed above

or below the tape. If above, an *emetic;* and if below, *a dose of salts,* followed as a matter of course. Sir Walter Scott tells the story of a blacksmith in the south of Scotland who disappeared from the range of vision of the great novelist and was afterwards found practicing medicine in an English city. The astonished Sir Walter asked the blacksmith if he knew anything about the healing art, and the latter acknowledged that he did not, but trusted mainly to "two simples—laudanum and calomel." "*Simples* with a vengeance," said Scott, "don't you kill more than you cure?" "Perhaps I do," retorted the brawny practitioner, "but it will be a long time before I make up for the Scots that the English killed on the fatal field of Flodden."

One hundred years ago, the recognition of the diseases of the heart and lungs was to the last degree conjectural; while as regards other internal organs it was the merest guesswork. Fevers and other disorders, which are as distinct in their character and course as a horse from a cow were classed together and treated in an indiscriminate manner—just as, at the same period, the law hanged with impartiality for murder and for horse-stealing. Ignorance of the laws of hygiene made hospitals and jails little better than pest-houses. The mortality from preventible diseases, such as smallpox and typhus and all the ghastly progeny of dirt and foul air, defies all computation. Lunatics were chained and beaten like wild beasts, and exposed to the jeers and leers of unfeeling men and women.

There is still, no doubt, a vast amount of suffering and disease amongst us, but it would be folly to deny that the difference between the past and the present is immense. The stethoscope has made it as easy to detect a damaged heart or an inefficient lung as it is to discover, by manipulation, a broken leg. Small-pox is no longer the standing menace to beauty that it once was, while it is scarcely taken into account by ordinary people as a possible danger to life. Typhoid fever still claims many victims, though it is being gradually driven off the field by an enlightened hygiene. Ty-

phus is almost unknown, except in the lowest and most squalid haunts of poverty. Madness is now treated as a disease, not as a curse of God or spite of the devil; the result being a large proportion of recoveries, and infinitely less suffering among the incurable. The loathsome compounds —invented, one might suppose, by a council of ghouls and scavengers—which used to be ordered, no longer vex the palates or upheave the stomachs of unfortunate patients. Less physic is given, and it is prescribed with a clearer purpose. Better still, more attention is paid to diet and the hygenic surroundings of the patient.

At the beginning of the nineteenth century a French surgeon (Boyer) of some consequence wrote a great work of eleven volumes, which represented the state of surgery at that time and in which the writer declared that this important science and art had attained the highest degree of perfection of which it was capable.

During the past twenty-five years, however, surgery has made infinitely greater progress than it made during the *twenty-five centuries* which preceded the time of Boyer. It is difficult to imagine the drama which was enacted in a surgical operation before pain was suppressed. If a man was unlucky enough to fall into the hands of the surgeon he had to bear cold steel and hot iron with what fortitude he could. Death under the knife, from sheer pain or shock, was not infrequent, and operations that might have saved life were refused from dread of the agony with which they were accompanied. In the majority of cases the operators began by binding the patient as if for torture; or they attained the same end by use of four or five vigorous and tried attendants. Now anaesthetics have robbed surgery of all its cruelty and half its danger; they have, moreover, extended its sphere of action, for operations are now often performed which formerly could not be attempted. No more consciousness, no more movements, no more pain.

The personality is suppressed, sensibility is abolished, mobility is extinguished. Then, too, the introduction of the

anti-septic method has largely increased the proportion of recoveries after severe wounds and mutilations. It is the present state of the art that makes surgeons capable and confident. The development of aseptic methods in surgery has been so rapid, and has attained to so high a degree of perfection in the last twenty-five years, that no practitioner of reasonable experience and skill would now decline an operation of abdominal surgery that in the 70's and early '80's would not have been attempted even by the most eminent.

It is a well settled truth, I think, that medicine does not progress so much as other sciences, simply because it has to do with matters infinitely more complex and abstruse than any of the others. The inherent difficulties of the subject are increased, too, by popular prejudice and ignorance, which throw obstacles in the way of even such slight means of investigation as we have. It is of course thoroughly understood that, by the vast majority of its followers, medicine is taken up solely as *a means of livelihood;* and the pursuit of truth for its own sake, in the present arrangement of things, requires first of all the possession of independent means. Virtue is its own reward in the practice of medicine, more, perhaps, than in any other sphere of labor. Hence, those who are most fitted to do work that would make all mankind their debtors, have too often no material on which to exercise their powers; while those who have the largest opportunities for observation have not time to make full use of them.

Dr. William Osler, whose name has been before the eyes of the public so much during the past year, has recently published a book entitled, "Counsels and Ideals," in which he says: "The practice of medicine is an *art,* not a trade; a *calling,* not a business—a calling in which your heart will be exercised equally with your head. 'Tis no idle challenge which we physicians throw out to the world when we claim that our mission is of the highest and noblest kind; nor can it be gainsaid that of late years our record as a body has been more encouraging in its practical results than those of the

other learned professions." Unfortunately for the medical profession the views of Dr. Osler in this instance are *not* the views of a very large number of intelligent people both in and out of the profession at the present time.

There seems to be a pretty wide-spread opinion prevalent that there is too much commercialism in the medical profession; that, in a large measure, the practice of medicine has degenerated into a *trade* and a *business*. It is admitted that the medical profession is an honorable one, but the question is asked "Are the majority if its members *honest* in their professional methods?" A well-known English physician, who is, besides, a close observer of affairs and a trenchant writer, has recently—following a visit to this country—published in a British periodical an elaborate article on "Medicine and Society in the United States." According to this writer the lines have been drawn very tight around the regular schools of medicine. It was supposed, almost, that their members could do no wrong. They were regarded as infallible, and legislation has conferred upon the profession very great privileges. Notwithstanding these facts, declares the writer, medical men are guilty of a vast amount of quackery and humbug; they charge exorbitant fees for small services; they are arbitrary and unjust in their relations to society, and jealous and mean in their relations to one another.

The writer first deals with the specialists who confine their attention to a single organ, such as the nose, liver, kidneys or lungs. These specialists, who are esteemed so highly by the public, the writer regards as on a very low plane. He says that a man of very limited ability and learning can, in a short time, acquire a certain familiarity in the management of a single organ, and by merely identifying himself with the treatment of that organ, and compiling some work on the subject (no matter how small its merit), he is able to advertise himself as a skilful specialist and earn a large income. Moreover, he soon begins to charge large fees. Society, says the writer, is beginning to resent the increased cost of medical and surgical help, and is getting to look on the members

of the medical profession as more mercenary and less disinterested than they were wont to be. Thus the relations between the profession and society are to some extent less cordial. Cases are now frequent in the law courts which testify to this fact.

Another trouble which exists between physicians and society, declares the writer, relates to the so-called etiquette by which society is coerced in the selection of *consultants*. Physicians claim the right to name the doctor who shall be called in consultation, and the consent of the attending physician is absolutely necessary before any consultation can be had. The attending physician often—very often, in fact,—when urged by the anxious family of his patient to call some other physician to a consultation, will summon as a consultant a personal friend or crony of his own—not because he is the one best fitted for the service, but because he is, simply, the doctor's personal and professional friend. Is this an honorable custom? Is it honest? Again, an attending physician makes, unwittingly and unintentionally, of course, a wrong diagnosis of a case. His visits to the patient continue regularly, and his bill just as regularly grows larger. Then the practitioner discovers that he has made a mistake in his diagnosis; whereupon he takes a new tack and sails serenely on in another course with his patient in tow. But when he comes to send in his bill for services he charges for all the visits he has made, although he knows many of them were rendered necessary only by his carelessness or lack of skill. Is not the physician who charges for such visits sailing under false colors? Is he an honorable practitioner?

I presume that nearly all of us gathered here to-night have had some experiences which would lead us at times to think and speak of certain classes and particular individuals in the medical profession in the same strong way that the English doctor to whom I have just referred has done. On the whole, however, I think the prevailing sentiment among us will be found to be that the average intelligent and capable doctor does an immense amount of work for nothing, and a good deal more in the interest of science—which is only indirectly to his

advantage. He works harder, gets rich more slowly and dies before he ought to, oftener than any other sort of professional worker. In the language of an unknown poet:—

"The doctor is a useful man,
Constructed on a noble plan;
He's sometimes fat and sometimes lean,
And sometimes just half-way between—
But none confers more blessings than
The doctor.

"The doctor is a generous man,
But people cheat him when they can;
They have their health restored 'on trust,'
And pay him sometimes when they must,
And swear no bill is bigger than
The doctor's."

FURTHER NOTES ON HIP DISEASE.

BY DR. SARAH D. WYCKOFF.
READ FEBRUARY 7, 1906.

In the practice of medicine we are always learning. One of the things we are most glad to learn more about is how to make a positive diagnosis early in the course of the disease, or how to treat doubtful cases with benefit to the patient, until they become clear, and in a way to make them clear as soon as possible.

I report to you this evening two cases that have been instructive to me on these points in hip disease:

CASE I. April 7, 1902, school boy, age 12, white.

Family History.—Good. Free from tuberculosis.

Personal History.—No severe illness. From babyhood, however has been thin, weakly, often ailing.

Present Illness.—Complains of pain about knee. Well as usual until about ten days ago, when soon after a fall from his bicycle he had pain at the knee and began to limp. Patient

now refuses to stand, because of severity of pain. No pain elsewhere, nor other symptoms.

Examination.—General appearance is that of one who is in some pain, but otherwise well. Prefers to lie with right leg flexed, abducted and externally rotated, but when the leg is straightened with gentle traction he is comfortable. No swelling, redness or bruises. Knee and other leg normal. Moderate lordosis.

Examination of chest and abdomen negative. Temperature 100.4°.

Palpation shows tenderness only over right trochanter, which is thickened, making the outlines indistinct.

Motion.—Flexion at hip possible to 45 degrees, extension and internal rotation impossible, external rotation limited. Muscle spasm present, most marked, as usual, at the beginning of the examination.

Measurements.—No atrophy. Apparent lengthening of 2 cm., measured shortening of 1 cm. taken from anterior superior spine to internal malleolus. Real difference none. Showing the leg is abducted.

Diagnosis made of hip disease, probably tuberculous.

Treatment.—Extension in bed. Salicylates.

Course.—Temperature became and continued normal. Pain lessened at once by extension, disappeared in a few days, returning only at times when apparatus became disarranged and traction lessened. Salicylates without effect. Positive diagnosis of tuberculosis, agreed to by consultant.

June 13. Deformity is reduced and muscle spasm lessened. Patient allowed up with Taylor hip splint. During the summer an attempt to walk on the unprotected leg caused pain, a return of the typical hip disease limp and the first deformity. A return to bed; extension for a time was again followed by relief. Atrophy of 3 cm. in calf and thigh had developed.

August 22. Measurements same on both sides. Slight muscle spasm. Patient allowed up again with hip splint.

January, 1903. Muscle spasm disappeared. Leg in correct position. Motion good.

June 6, 1903. Six months after disappearance of muscle spasm, patient relieved of splint and allowed to go about with high shoe and crutches for six months longer, gradually returning to full use of leg. Massage of hip and knee was given.

January, 1904. Nearly two years after onset of trouble patient began to walk without assistance. No deformity. Motion normal. Since that time, the hip has continued well, the patient has developed normally and for the first time in his life has been really well and strong.

CASE II. June 15, 1905. Girl, aged 7, white.

Family History.—Markedly tuberculous on one side, otherwise good.

Personal History.—No serious illness, generally fairly strong. March, 1904, a cold left a cough which lasted several weeks. Has been somewhat run down since then.

Present Illness.—Patient complains of pain in knee. As well as usual until about two weeks ago, when she had some pain in one arm, quickly disappearing. No fever, swelling or other symptoms. Last few weeks has complained of feeling tired, and lately, of vague pains in leg. History of a fall two or three weeks ago. Pain increased somewhat yesterday and during the night become very severe. To-day she refuses to walk at all. Is comfortable when lying quietly; any movement of leg is painful. Pain always referred to knee. No limp at any time.

Examination.—Child looks well and fairly comfortable. Chest and abdomen negative. Temperature 100°. Prefers to lie with leg flexed and turned out. No swelling, redness or bruises. High degree of lordosis. Spinal column not sensitive. Palpation shows marked tenderness over trochanter and head of femur, none elsewhere.

Motion greatly limited in every direction, with high degree of muscle spasm.

Measurements.—When legs are parallel, there is an apparent lengthening of 4 cm., showing great abduction. No real difference in length. No atrophy.

Treatment.—Extension in bed. Salicylates.

Course.—Salicylates had no effect on pain. Temperature became normal the first evening and remained so. Patient comfortable with extension, in pain without it. The first night the apparatus became disarranged so the weight was not borne by the leg and the patient cried aloud with severe pain. She was relieved at once when the traction was restored and slept quietly the rest of the night.

During the first four or five days the deformity grew worse, when she was examined without the traction.

Diagnosis of hip disease, most probably tuberculous, was made and confirmed by consultation.

July 7. All pain and tenderness disappeared. Patient gained in weight, feels and looks well. The only signs left in leg are a little muscular spasm and limitation of full flexion. Taken to New York for consultation with Dr. Whitman. He was unable to decide positively, but thought the trouble was probably not tuberculosis. He advised allowing her to walk about, as usual, in order to clear the diagnosis. She walked awkwardly, with a slight limp, and for a few days complained of some pain in her leg. But she improved steadily after this. The limp became only a hitch in her walk and after a few weeks entirely disappeared. There was no more pain. No atrophy developed. She continued to gain in weight and has kept well.

An early positive diagnosis in cases of suspected tuberculosis of the hip is imperatively desirable, not to subject any child unnecessarily to the tedious hardships of the hip-disease treatment, nor to lessen any child's chances of perfect recovery from tuberculosis of the hip by failing to commence the rigid treatment at the earliest possible moment.

Tuberculin is useful, but cannot be always used, nor, if positive in reaction, does it locate the tuberculous process.

These cases have proved to me that a positive diagnosis may be exceedingly difficult. Dr. Whitman, too, said that all the signs and symptoms of a beginning tuberculous hip may be present in the non-tuberculous inflammation.

Both were acute, both, after a slight fall, developed the condition seen in tuberculosis of the hip joint. In both relief came only with rest and traction.

Cace II lacked the hip limp and had complained of pain in arm previously, but rheumatism remedies were without effect, while the tuberculosis in the family history and the gradual impairment of general health were in favor of tuberculosis, and in no case could the findings on examination be more fully typical. The deformity was more pronounced than in Case I.

Both cases became apparently well after a short time in extension. The tuberculous case, however, taking twice as long as the other.

The results of using the leg after apparent recovery gave the first sure indications. The non-tuberculous improving and staying well; the tuberculous quickly returning to the original condition.

The rest of the traction treatment proved to have been a good one for the non-tuberculous, while the experiment of walking cut short as soon as the symptoms re-appeared, proved not to interfere with ultimate good results in the tuberculous. Some atrophy, also, developed in the latter; none in the former.

It would seem, then, to be a good plan that a child who has increasing pain in the leg, or pain and limp, should be put to bed in extension. About a week after all pain, deformity and other symptoms and signs have disappeared, remove all apparatus and allow child to go about as usual, in order to make the diagnosis. If the trouble returns it is tuberculous and can be treated accordingly. If it remains well, the lesion has been a simple one and has recovered more quickly because of the rest treatment.

CYSTITIS.

BY DR. B. J. WETHERBY, WILKES-BARRE, PA.

READ FEBRUARY 21, 1906.

Cystitis is an inflammation of the walls of the bladder, the result of germ infection. The definition does not admit of there being such a thing as idiopathic cystitis. True, there are many cases in which the cause is not easily found; but that is our fault—the cause is always there, and it is always germ infection.

Located as the bladder is in its well-protected situation it is not very liable to accidental injury; an even temperature is maintained, and it is constantly flushed with a warm, comparatively bland and aseptic fluid, so that in rare cases it would *seem* to be idiopathic inflammation. A careful search generally discloses a well-defined cause; and that cause is always infection of some sort, either primary or secondary.

For convenience, we divide our cases into two classes,—acute and chronic. We could go farther and subdivide them into other classes, as catarrhal, interstititial, gangrenous or necrotic, membranous, pericystic, etc., but these are more differences in degree than in kind. Most cases are acute in the beginning, and become subacute or chronic as the case progresses and cure is not affected; but there are a goodly number of cases that present subacute or chronic symptoms from the start. These are cases in which the infection has been limited, or the resisting power has been good.

We are told that cystitis may be caused by a number of conditions or things, such as taking cold, a prolonged spree, stone or other foreign matter in the bladder, intravesicular growths; chemic causes, as the injection of strong, irritating liquids into the bladder, overdistention from retention of urine, etc. These things of themselves do not cause cystitis, but they lower the resisting power of the bladder and open the way to a later germ infection.

The most common cause of cystitis is the passage of cathe-

ters or sounds, these acting as carriers of germs already upon the instruments or transferred from the physician's or nurse's hands. They may push back into the bladder micro-organisms that have been lying in the meatus or urethra. On this account it is always best when possible to cleanse the meatus and irrigate the urethra with an antiseptic solution before the introduction of instruments; and I like to follow instrumentation with a second irrigation to make assurance doubly sure. But repeated catheterization sometimes sets up a cystitis even where every antiseptic precaution has been taken. This is especially true with women.

No matter how carefully the catheter has been sterilized and the meatus cleansed, we sometimes see a nasty cystitis develop, and we are at a loss to account for the cause and sometimes unjustly blame the nurse for being careless. When I began practice it was the fashion, at least in my locality, to pass the catheter without uncovering the patient, depending upon the sense of touch for guidance. I saw a good many cases of cystitis in those days, and no wonder. Not so many years ago I was called to catheterize a lying-in woman, for an old fellow who had failed to find the meatus after poking around in the dark for nearly half an hour. I turned back the bedclothes, bathed the parts with an antiseptic and passed the catheter straight in. The old fellow scored me roundly for the indecent exposure, but the patient came to my rescue by telling him that of the two methods she preferred mine; and not long after he swung in line himself. As Robert T. Morris said of making an exploratory incission when the diagnosis of appendicitis was in doubt, "one look is better than two feels or four guesses." It is possible that in such cases the catheter produces a little traumatism or irritation and pre-existing germs do the rest. It is the same with cystitis when stone is said to be the cause—in any kind of traumatism; trauma plus infection.

What has been said of the catheter of course applies to sounds. It has become my habit when passing sounds, to follow the sounding with an irrigation of both the urethra and

bladder of a hot, mild antiseptic fluid. It takes a little more time, but the patient seldom or never experiences the so-called urethral chill and fever.

Cystitis complicating acute gonorrhoea is not as common as one would suppose, even when the treatment is not of the best. There is often—indeed very often—a posterior urethritis, but the bladder proper generally escapes. A whole or a part of the trigonum often becomes infected by the gonococci, but the rest of the bladder wall seems to be immune to this particular micro-organism. In the larger cities among the dispensary patients who go from one clinic to another, and who make no difference in their manner of living when suffering from gonorrhoea, and who are dirty, and ignorant in the manner of using injections, cystitis complicating gonorrhoea is much more common; but even in these cases other germs than the gonococci are usually found along with the gonococci —a mixed infection—and it is to the other germs, generally the streptococcus or the staphyloccus that the cystitis is due.

Many cases that are diagnosed gonorrhoeal cystitis are cases of posterior urethritis or follicular prostatitis. A man recently came to my office in the third week of a pretty sharp attack of gonorrhoea, complaining of urinating as often as every fifteen minutes, great and constant tenesmus, blood at the close of each urination and constant burning along the urethra. He told me "it had got back into his bladder." But it had not. This is only a partial picture of cystitis. The urine in the second glass was almost normal, and the blood, a few drops of which came after urinating, was bright red; and there was no fever. Treatment of the posterior urethra promptly controlled the symptoms.

The symptoms of cystitis are microbe-containing pus and epithelial cells in the last urine passed; frequent, hurried and painful urination; pain, haematuria, fever, nausea, mental depression and sepsis. The symptoms are not all present in every case, and are somewhat different in the acute and chronic stages. A microscopic examination should always be made to differentiate pus originating in the bladder from

that which comes from farther up the urinary tract, as well as to find out which of the germs is the cause of the infection. The most common micro-organisms are, in the order named, the colon bacillus, the streptococci, staphylococci and the gonococci. They may find their way into the bladder in several different ways. The catheter route is probably the most common, but often it is through the lymph channels or the blood. The latter may be the case in what we used to term idiopathic cystitis, cases in which we genrally find the colon bacillus.

There may be pus in the urine and the bladder be healthy. In cystitis there is generally considerable mucus with the pus, which settles as the urine stands. The pus settles to the bottom of the container and the mucus settles over it.

The next symptom, frequent and hurried urination, is always present and is aggravated by the upright position.

The congested and sensitive bladder walls will not tolerate an accumulation of urine, and muscular spasm takes place as soon as a very small quantity has gathered, sometimes only a few drops. Walking, jolting or getting chilled makes this symptom still worse. The call may be so urgent that the patient loses all control over his sphincter vesicae and urination occurs involuntarily. This often becomes a habit which is hard to break, after the disease has been cured. Sometime ago I had a patient, a commercial traveler, who had had chronic cystitis for some months. He urinated every ten to fifteen minutes during the day, wearing a urinal so that he could continue his work. He had grown so accustomed to letting the urine pass at any time that he had become entirely unconscious of it. After the cystitis was cured the habit persisted. Finally I had him quit work for a few days and give his entire time to educating his bladder. As soon as he could retain his urine easily for two hours I made him discard his urinal. He soiled his clothes a number of times, but this in itself served as a reminder, and he soon gained perfect control.

A very bad result of the long continued muscular contractions is the thickening of the bladder walls and lessening of

the bladder capacity. I have such a patient now. She had cystitis six years. She has had no cystitis for several months, but the bladder capacity is only about four ounces. This condition is probably permanant with her.

The pain which accompanies cystitis is always present in acute cases, and nearly always present in some degree in chronic cases. In some the pain is very severe, being felt as an intense burning, throbbing pain in the neck of the bladder—"in the seat," the patients say, from which point it is reflected to the hypogastrium, the end of the penis, the rectum and sacrum, and down the inside of the thighs. The pain is accompanied by an irresistible desire to urinate, especially when the inflammation is in the neck of the bladder. The pain is most severe at the close of the urinary act, although a short period of relief is experienced after the tenesmus subsides. When the cystitis is caused by, or complicated by, stone, the pain is most severe after the urine has been voided, the urine acting as a sort of cushion around the stone.

Haematuria is present in the majority of cases of real inflammation. In the short, mild acute cases it may be absent. The blood, when it comes from the bladder walls, is seldom large in quantity, and is mixed with the urine, giving it a dark, coffee-colored appearance. If the blood is bright red, and comes at the close of urination, it is from the posterior urethra and not from the bladder.

If the case is at all acute there will be fever and other symptoms of inflammation, such as nausea, vomiting, malaise, etc. In light cases the amount of fever is so small as not to be noticeable. In old chronic cases, with enlarged prostate, residual urine and catheter life, the fever is of the septic type, often accompanied by great prostration.

Any one of these symptoms taken alone does not necessarily mean cystitis. The pus may come from the kidney; the blood may come from the postrior urethra or from higher up the urinary tract, while the frequent micturition may be entirely due to some nervous or other condition. But taken altogether, pus in which there are micro-organisms and bladder epithe-

lium together with more or less mucus; dark blood mixed with the urine; pain of the character described, frequent and hurried urination, with perhaps fever, nausea, vomiting and depression—the clinical picture cannot be mistaken.

The prognosis depends upon the cause, the severity of the attack and the age of the patient. The disease may be so mild and transient as to cause the patient only a little discomfort, with, perhaps, a few days away from business; it may be so severe as to end in only partial recovery with an irreparably damaged bladder, or it may end in death. In old and debilitated men with enlarged prostates and residual urine, death from sepsis and exhaustion is common. In such cases brilliant results have lately been achieved in what were formerly looked upon as hopeless cases, by doing a prostatectomy and securing good bladder drainage. So, in all cases, the first thing to do is to find the cause and remove it if possible. Obviously there would be no use in drugging a patient when the cause was, for instance, a stone.

In the milder cases, especially in young, vigorous, subjects the treatment is very simple. Correct living for a few days, with rest in bed, if possible, the drinking freely of pure water, restricting the diet and making milk the main food, and correcting the reaction of the urine if it is too acid or alkaline, may be all that is needed. Many of these lighter cases get well without any treatment at all; but they are rather cases of congestion than inflammation. The majority of cases, however, will require pretty energetic treatment. Among the causes that must be removed before we can make any headway toward cure is stricture—often overlooked. One of the most obstinate cases I ever had was caused, or kept up, by a deep stricture. For months I irrigated with all kinds of antiseptics, and had him take cystogen, urotropin, methylene blue, salol, oil of santal—and all the rest; but the pus was always present, and the pain was so great that he had to take anodynes several times a day to enable him to continue his work. The stricture was so tight that only a filiform bougie could be passed. After becoming so reduced in health as to be unable to continue

his work he consented to an operation. Under ether a modified rapid dilitation was done and dilitation carried up to a 27 French. This was done last September, at which time he weighed one hundred and twenty-two pounds. I passed the sound and irrigated the bladder once a week for a couple of months following the operation, but treat him only once a month now. He has taken six grains of helmitol four times a day most of the time since the operation—practically the same treatment he had before. The pus and blood entirely disappeared sometime ago; there is no pain nor discomfort, urination occurs at normal intervals, and his weight last week was one hundred and fifty-one and one-half pounds.

While I do not think that hyperacidity of the urine in itself can cause cystitis, I do think that highly concentrated urine is very irritating to the bladder nucosa and may open the way for infection by lessening the resistence of the bladder. It is the crystals of the different urates and oxylates in the urine that make it so irritating. Diluents and alkaline diuretics are indicated in this condition.

After having removed the cause so far as possible, the next thing is the treatment of its results—the cystitis itself. There are many drugs recommended, but only a few do any real good. Ignoring many in the long list, I will mention only the ones that have been most useful in my hands. First, we must ease the pain and stop the tenesmus and frequent micturition. For this, I use only three drugs, either alone or in combination, —opium or its derivatives, hyoscyamus and belladonna. When codeia will relieve, I prefer it; but the dose must be rather large—from one-half to one grain. Some of the severer cases will not yield to codeia, and then I use morphia in combination with hyoscyamus and belladonna in the form of a rectal suppository. I have thought this method of giving the anodynes more effective than giving them per oram.

Having put the bladder at rest as far as possible, the next thing is to make the urine as nearly sterile (some say antiseptic) as possible, and, if we cannot kill the germs that way, starve them out. I formerly used either cystogen or urotropin for

this purpose, on the theory, which I think is correct, that these preparations are converted into, or set free, formalin, which is excreted by the urine. In properly selected cases they act admirably, the pus soon disappearing from the urine, and the urine increasing in amount. But notwithstanding the statements made by the manufacturers, both cystogen and urotropin, which, as you know, are the same thing under different names, are very irritating in many cases, especially when the urine is acid, and cannot be long continued. When the urine is alkaline they are generally well tolerated and change the reaction from alkaline to acid. When using urotropin, or cystogen, we must remember that if they are long continued they are apt to cause congestion of the kidneys. On account of their being contraindicated in so many cases, I some time ago began looking around for something that could be used with either reaction of the urine. Such a preparation I found in helmitol. I have used it in a great many cases,—in one for several weeks continuously, and so far it has never irritated. If there is pain and tenemus, I combine codeia with it for a time. The dose is the same as that of urotropin. Like the latter it is a formalin compound, known chemically as methylene citrate of urotropin. Besides being nonirritating, it is pleasant to the taste, can be dispensed either in powders or capsules, and costs only about half as much as cystogen.

The balsams and oils of copaiba and santal have been much used in cystitis, many times indiscriminately. Wrongly used they do more harm than good. In very chronic cases they do good by stimulating the mucous membrane,—sort of waking it up. They should never be given in acute cases, nor for too long a time, as their prolonged use will bring about the same condition we are trying to cure. Bear in mind, also, that the urine passed by a patient who is taking copabia gives the albumen reaction with the nitric acid test.

I have left to the last what I consider the most important part of the treatment—that is, irrigation. It is indicated in all chronic and many acute cases. Properly administered it can do no harm, and it always makes the patient more comfort-

able. Medicines taken by the mouth to be excreted by the kidneys must necessarily be too much diluted by the time they reach the bladder to have much local effect. It is different with drugs introduced into the bladder by irrigation. They are of known strength and action and reach the seat of the disease unchanged. Besides their antiseptic action the large amount of fluid used cleanses the bladder and washes out the residual urine, pus, mucus, etc. The quantity of fluid should be large enough to do this thoroughly. I always use a quart at each treatment, except in old cases in which the bladder walls have been thickened and the cavity contracted so that only an ounce or two can be introduced at one time. After from three to five fillings the fluid comes away clear and our object is accomplished.

The intervals between irrigations is a question of judgment. In some cases in which the amount of mucus and pus is large the bladder ought to be irrigated twice a day. In most cases once a day is often enough, while in the old chronic cases every second day is sufficient.

The kind of antiseptic used should not be a matter of routine, but should be suited to each individual case, based principally on the findings of the microscope. Packard, in the *New England Medical Gazette,* suggests the following: "For colon bacillus, use two percent. potassium permanganate, or 1-25,000 bichloride of mercury, or 1-800 formalin."

"For staphylococcus, streptococcus and typhoid bacillus: 1-25,000 bichloride of mercury, or 1-800 formalin, or one drachm to one pint sodium salicylate." "Tubercle: Solution of zinc chloride or an emulsion of iodoform."

"Gonococcus: Silver nitrate or the organic silver preparations."

This plan with some unimportant modifications is the one I find most useful. I use potassium permanganate in acute and silver nitrate in chronic cases. I find the weaker solutions of either do as well or better than the stronger solutions, and their use is not attended with so much pain. I seldom exceed 1-1000 of the permanganate, or 1-1500 of the silver nitrate,

and I always begin treatment with very much weaker solutions. Even in these strengths the discomfort immediately following their use is considerable, often amounting to actual pain.

For the mixed infections—the staphylococcus, streptococcus and the typhoid bacillus, I use a formula of Frank Lydston's, found on page 752 of his book on genito-urinary diseases. It is as follows:

Rx Ac. Carbolici .....oz. II.
Sodii Biboratis .....oz. IV.
Sodii Salicylatis .....oz. II.
Glycerine .....pt. I.

M. Sig: Use one ounce to each quart of warm water, and add as much boric acid as can be dissolved in the lotion.

I have this made up as a stock solution, two quarts at a time. The reaction which takes place makes a salicylate of phenol, and used in the strength advised, it is soothing to the patient. I always leave a few ounces in the bladder at the close of the irrigation to be voided with the urine at the next regular urination, thus prolonging its antiseptic action with no discomfort to the patient.

My experience with the organic silver salts, except in such quantity as to make the price prohibitive, has been negative.

Whenever possible, and that is nearly always, I use only a short nozzle in the meatus when irrigating, according to the Valentine method. No catheter or other instrument should be introduced into the bladder when it can be avoided.

AUTOINTOXICATION.

BY DR. H. B. GIBBY, PITTSTON, PA.

READ MARCH 21, 1906.

The important role played by certain poisonous substances of the nature of alkaloids which are present in the human system under varying conditions, in the production of many morbid and pathological conditions, is being generally recognized at the present time in the trend of modern diagnosis and therapeutics. Laboratory experiments have demonstrated, and clinical evidence has corroberated the fact, that in those diseases whose etiology depends upon the presence of a specific micro-organism, the symptoms and pathological conditions which arise are produced, not by the presence of the micro-organism *per se,* but by the poison elaborated by the micro-organism in the tissue that nourishes it.

All forms of life depend for their growth and multiplication on the ingestion of food, and this is the case with the pathogenic micro-organisms. When a suitable medium is found, and a proper condition of temperature, this activity is manifested in the throwing out of a digestive substance by the micro-organism which prepares the tissue upon which it has lodged for absorption and assimilation. The cell then throws off an excrement—a process called by some dis-assimilation, by others remolecularization—and this waste material will, when in sufficient quantity, bring about the death of the cell that produced it. This cellular activity as represented in the case of the micro-organism is taking place on a grander scale in the human organism, where instead of all the functions being carried out by the individual cell the various processes are delegated to certain groups of special cells, as the alimentary canal, liver, kidneys, etc., and the end product which is finally eliminated, contains a varying amount of toxic material, poisonous to the organism if re-absorbed.

The poisons that are found in the tissues of the body are either taken into the body from without, or are found within

the organism, and it is this latter class that we especially wish to consider under the head of auto-intoxication.

If we embrace under the term of auto-intoxicants all those poisons found within the organism we must include in our discussion all the toxemias which occur in the course of infectious diseases.

However, the term auto-intoxication is generally accepted as applying to the toxines produced by the body itself, mainly as a result of metabolic processes. We must not forget that the processes of assimilation and dis-assimilation which, are normally taking place in the tissues, are producing various products of more or less toxicity, which as end products are eliminated from the system through the several emunctories, among which the kidneys play the chief role. Bouchard has demonstrated by an elaborate system of experiments the toxicity of normal urine, and has discovered no less than seven substances that are more or less toxic when introduced into the blood of rabbits.

The alimentary canal plays an important part in the origin of these poisons, some of them as potass, and ammonia being introduced with the food stuffs, others occur in the intestine as the result of fermentative and putrefactive processes. Still others are produced in the secretions, as saliva, bile, etc., and the most important, by the dis-assimilation of the tissues.

These toxines find their way into the blood—those absorbed from the intestines passing through the portal circulation, where many of them are modified or neutralized by the liver, as the blood from the portal circulation is perceptibly more toxic than that which has passed through the liver. The liver thus plays an important part in preventing auto-intoxication.

The toxines resulting from the dis-assimilation taking place in the tissues are also taken up by the blood, and are ultimately thrown off by the skin, lungs and kidneys.

These toxines, therefore, being present in considerable quantity, as the result of normal vital processes, it may appear strange to us that the health of the individual can be maintained under such apparently adverse circumstances, and this

brings us to a consideration of the means by which the system protects itself, and also of the conditions under which auto-intoxication may occur.

In the first place, the health of the individual depends largely upon his vital resistance, or condition of nutrition. Where the nutrition is at low ebb, either from hereditary influence, or from excesses of work or pleasure, the vital resistance of the tissues is naturally impaired, the secretions possess but little neutralizing properties, and the emunctories are clogged and work imperfectly, and intoxication may be the result; but on the other hand, where as a result of normal nutrition the vital resistance is high, the secretions possess a marked neutralizing property, and the emunctories are able to dispose of a large amount of toxic material.

Laboratory experiments have led to the belief that some toxins have a neutralizing effect upon one another. There is no doubt that some forms of intoxication result from the failure of function in certain organs. This is exemplified in myxoedema, where the thyroid is at fault, in diabetes of pancreatic orgin, in acute yellow atrophy of the liver and Addison's disease.

The liver, as has been previously stated, protects the system against intestinal poisons; it also produces urea which has been proved to be an excellent diuretic. In those conditions in which jaundice occurs, this protecting action of the liver ceases, and on the other hand it produces toxicity by the deposition of its coloring matter, thus destroying muscle cells and blood corpuscles, thereby setting free organic mineral poisons, especially potass, and also by increasing dis-assimilation.

Intoxication may also result from an imperfect or anomalous metabolism, such as occurs in diabetes, where a poisonous substance, acetone, is formed directly by a defective elaboration by the tissues and not of microbic origin.

In those cases where the elimination is imperfect, the retention of toxic substances in the organs produces the morbid results. This form of intoxication is present in uraemia, where in the last stages of nephritis the parenchyma of the kid-

neys having been destroyed to such an extent that they are no longer able to functionate, not only the urea, but all the poisons that are normally found in the urine, are retained in the system, and coma or convulsions finally result, according to which poison predominates.

The intoxication from burns belongs also to this class, where the eliminating action of the skin is impaired. I have had the opportunity of observing several cases of severe burns, where a large portion of the skin was involved, and the gradual accumulation of the toxines could be traced from day to day in the temperature, pulse, increasing delirium, etc., to a fatal termination, which usually occurred between the seventh and ninth days.

No factor, however, holds a more important position in the etiology of auto-intoxication than acute and chronic disturbances of the digestive tract. These may give rise to symptoms on the one hand so slight as to almost escape our attention, on the other, of the greatest severity, with all degrees from one extreme to the other. The milder forms of digestive disturbance give rise to head-ache, loss of appetite, flatulence, colic, diarrhoea, etc. In some cases we meet with an eruption, or an anaemic condition of the skin and some of the severe cases produce faintness, giddiness, insomnia, coma, melancholia, etc. In a number of cases I have noticed an intermittent pulse as a direct result of a digestive disturbance, which disappeared entirely, when the disturbance was corrected.

Bouchard, to whose excellent and most interesting lectures I am indebted for many of the facts presented, has observed a semiological relation between dilatation of the stomach, and nodular deformities at the base of the second phalanges of the fingers. These differ from the rheumatic nodosities of Heberden, which are always found at the third articulation of the fingers.

Bouchard also states that these nodosities disappear under appropriate treatment for the dilated stomach.

I have frequently traced severe pains in the joints and muscles, which were of short duration and unaccompanied by

swelling or heat, to a slight attack of fermentative indigestion. I have been unable to determine the exact substance which was responsible for the trouble, but the symptoms disappeared promptly when the indigestion was relieved.

The sources of intoxication from the intestine are mainly derived from fermentative and putrefactive changes, brought about by bacterial activity. This bacterial activity is not considered at the present day to be a necessary part of digestion, as the products thus formed are of no special nutritive value.

The carbohydrate fermentations take place in the stomach and small intestines, and we have formed as a result several acids, gases, etc., which, if not in excess, produce little or no disturbances.

The proteid decomposition takes place in the large intestines, and gives rise also to various acids, gases and chemical compounds. The flow of bile into the intestines has a deterrent effect upon the putrefactive and fermentative processes, and its absence is marked by an increase of the products of these processes, namely, ptomaines and toxalbumens, the latter by far the most toxic, and responsible for the acute symptoms of food poisoning. In what is commonly called ptomaine poisoning, the toxalbumens are formed in the food as the result of bacterial putrefaction previous to its being eaten, and this, therefore, does not strictly come under the head of auto-intoxication.

The therapeutics of auto-intoxication deserve some attention, and we find the following indications to be that: First, to oppose the formation of the poison, which may be accomplished in some cases by the administration of antiseptics, as napthalin, iodoform, salol, etc., or by the administration of charcoal, which fixes some of the alkaloidal toxines and promotes their absorption.

After absorption has occurred, we can stimulate the liver, to increase its neutralizing power, or stimulate the emunctories. Bouchard believes that the production of diaphoresis does more harm than good, as it lessens kidney secretion and does not carry off much poison through the skin.

We, therefore, find the healthy man to be both a receptacle and laboratory of poisons, receiving them in his food, producing them by dis-assimilation and forming then in the secretions, and yet intoxication does not result, as the liver neutralizes or destroys part of the toxic substances, while the remainder are eliminated by the kidneys, lungs, and skin.

Auto-intoxication is accordingly possible, only where there is impairment of the normal functions of the tissues of the body.

A VISIT TO THE CLINICS AND HOSPITALS OF PHILADELPHIA.

BY DR. WALTER DAVIS, WILKES-BARRE, PA.

READ APRIL 4, 1906.

Several weeks ago, Dr. Fell and myself started for Philadelphia for the purpose of visiting some of the hospitals, clinics and laboratories of that good city to which so many members of this Society, old and young, are indebted for the foundations of their medical education. We felt that no city could better repay a visit, for, although the center of interest may swing at times to Boston, Baltimore, New York, Chicago or Buffalo, or even to some small town in the wilderness, if genius should be there, still, Philadelphia has an inexhaustible wealth of clinical material and matchless medical and surgical traditions to spur the present generations into the lead in the race for efficiency. And in fact, Philadelphia is to-day a Mecca, not only for medical students, but for physicians of the whole country. At one of the clinics, among about thirty present, the ones I happened to meet came from San Francisco, Canada and South America, and Dr. Fell talked with one from Minnesota, six miles from Rochester.

One of the things which make it worth while for any graduate of five or ten or more years standing to re-visit his alma mater and her sister rivals in Philadelphia is the fact that during that time, important changes have occurred, as they always must occur to meet the needs of a growing science and the demands of increasing influence. The developments in the profession peculiar to the last ten years—among them the sanitorium treatment of tuberculosis, and generally increased use of the methods of physiological therapeutics; the increasing practical application of clinical laboratory methods, both to medicine and surgery, and the great development in the surgery of the abdomen, especially the upper abdomen, as well as in the surgery of the brain, breast and prostate, all

these have called for changes in the methods of men and institutions everywhere and require an effort by even the youngest graduate if he wishes to prevent premature senility. Among the changes of most significence in the way of equipment that we observed were the mammoth new medical laboratories at the University of Pennsylvania, and the splendid new medical building of the Jefferson Medical College. Each of which will well repay a visit by any of the alumni of either institution.

We spent a morning in the new patholgical laboratory at the University under the care of Professor Smith, and obtained a full description of their technique for preparing gross and miscrscopic specimens. Most of the routine work here and at the German Hospital Laboratory is done by paid non-medical attendants.

The preparations of the paraffine sections which give the best results takes about two weeks and requires pretty careful watching. This makes it formidable to students and almost prohibitive to the practicing physician unless he has a paid assistant or a competent resident physician at his disposal to attend to the routine details, while he makes the diagnosis from the stained specimens. The freezing method, while very desirable on account of its rapidity, thus making it accessible to the practicing physician and more satisfactory to the surgeon eager for the pathological diagnosis, is very little used in the Philadelphia Hospitals.

Our full day spent at the Medico Chirurgical Hospital was pleasant and profitable. We were taken in charge by the Dean, Dr. Seneca Egbert, a class-mate of Dr. Fell's and the brother of a class mate of mine at Princeton.

Although not graduates of the Medico Chi, we were certainly made to feel at home. We saw the hospital and college from the garret to the Student's Club in the cellar, and were only denied one thing—the diploma, after we had gone through so thoroughly. After visiting the wards, we attended Dr. John V. Shoemaker's clinic on skin diseases and then Dr. Webster Fox's eye clinic, at which he performed a cat-

aract operation. He also gave a beautiful demonstration of a number of cases of corneal ulcer by instilling a solution of fluoresine, which turns the ulcerated portion green, but leaves the healthy cornea clear. His treatment of the ulcers consisted of the application of a solution of tri chloracetic acid, a fine antiseptic, which we owe to its virtues having been discovered by the dentists in the treatment of pyorrhoea alveolaris.

Dr. Fox also showed a way of applying an eye bandage which he seemed to value very highly for its simplicity in application and removal and its security. For the sake of the eye specialists who may not have seen it, and the general practitioners who sometimes have the timerity to apply one, I will try to demonstrate it on Dr. Barney.

At the Fox clinic we also saw some radiographs demonstrating Dr. Pfhaler's method of locating the exact position of foreign bodies in the eye. Dr. Pfhaler is the X-ray X-pert of the Medico Chi. He uses a very compact apparatus, one that would go into any office without being too much in the way. With it he takes fine pictures of Kidney stones with only ten seconds exposures, even in fat people. He also took part in the clinic by Dr. James Anders, showing a ten seconds radiograph of the chest. For the purposes of demonstration to the whole class he used a portable light box, which showed the details plainly to every student in the amphitheatre.

This radiograph showed the outlines of the heart and the presence of distinct pea-sized foci in the right apex. The case from which it was taken, was one of inspiration pneumonia following a visit to a dentist who pulled a number of the patient's teeth. During the height of the pneumonia the patient coughed up a tooth which the dentist had neglected to extract from the lungs. If the surgeon must count his pads, the dentist ought to check off the teeth he pulls.

Dr. Anders' clinic was a fine sample of what we called at the University, a clinical conference. I shall describe this method of teaching in case some of the older men may not have seen it.

Five members of the class are detailed to the study of some interesting case, such as this one of inspiration pneumonia. During the week preceding the conference, at which each student reads the paper he has written as the result of his study, he has free access to the Hospital ward. One writes up the history, one the physical signs, another makes the diagnosis, another details the treatment. They take his blood pressure, count the corpuscles and haemoglobin, study numerous factors in the urine, etc.

The work done in this case of inspiration pneumonia, with a possible tubercular infection, was excellent. A patient could ask nothing better than to be the subject of such a clinical conference. After the boys had finished, Dr. Anders made a few remarks and had the physical signs demonstrated and then Dr. Pfhaler showed his fine radiograph of the case, which fully confirmed the diagnosis.

After this clinic, we visited the chemical laboratory, under Professor Meeker. He showed us his large hospital water filter, which converts the dirty Schuylkill water into a bacteria free product, so clear that you can look through a cylinder of it four feet long and not know that there is water in the cylinder unless you are told.

Besides many other ingenious pieces of apparatus invented by himself, he showed us his new apparatus for making the Heller contact test, of which I show a sample.

At Dr. McFarland's Pathological Laboratory we had the opportunity to examine twenty to thirty microscopic slides, illustrating the various forms of cancer.

We spent Sunday morning at Joseph Price's clinic, where he operated on two cases of tubal disease and removed several appendixes. Dr. Price is a picturesque talker. He told the story of Burke, the giant humpback of the time of Sir Astley Cooper. Burke murdered people and sold their bodies to the medical schools for anatomical material. Sometimes he smothered them and sometimes killed them by injuring the abdominal organs through a vaginal puncture.

During his trial he made a curious point in ethics. He de-

nied that he had killed his own niece, who was one of the victims. When asked why he had not killed her, he said he did not think it right to kill his own relative, so he had asked his accomplice to do it for him, while he merely held the legs.

Dr. Price told that story in connection with the recent hanging of two negro murderers in New Jersey. He regretted that criminals should not be used for vivisection instead of being hung.

In connection with the tubal cases of gonorrheal origin, he said that no young woman should marry a man without demanding if he be bible virtuous. Also that no man who ever had gonorrhoea should be allowed to marry except for the purpose of saving some pretty tow-headed courtesan. He also declared that no woman with gonorrhoeal pus tubes, even if operated upon, would be well, even if she lived to be one hundred years old.

At the Gynecian Hospital, we saw some nice plastic work by Dr. Byea, an old resident of the Wilkes-Barre Hospital. Probably the most interesting time of all, was that spent at Deaver's clinic, one of the busiest, not only in Philadelphia, but in the whole country. Last year he performed nearly sixteen hundred operations. We spent three afternoons there. On Saturday, from one o'clock on, he did eleven abdominal operations and an amputation. On Wednesday afternoon he removed seven appendixes, one uterus, one tumor of the breast, and did the transverse overlapping operation for umbilical hernia, bringing the clinic to an end at four P. M.

Some points in the operative technique were as follows; silk ligatures were freely used inside the abdomen.

The incision in appendicitis cases was usually far to the other side near the anterior spine. In interval cases it was just large enough to admit two fingers tips. The intestines were handled freely with plain bladed tissue forceps. In pus cases great care was taken in the disposition of gauze, this being, according to the operator, the secret of success. Two layers of pads were placed superficially around the edge of the mass just under the abdomen wall. None were pushed

far into the abdomen. After the appendix was excised the outer layer of pads was removed, the abdominal wall elevated by retractors and a single heavy piece of iodoform gauze placed around the circumference of the entire wound and left in permanently. The inner layer of pads was then removed, a glass drainage tube was passed through the center of the iodoform gauze into the pelvis, from which the pus was then sucked by a syringe.

Few sutures were used in pus cases, sometimes none at all, sometimes a single one of silkworm gut.

Haemostasis was carefully done, every clamped point being tied.

When in clean cases the layer method of closing was used, the skin edges were just barely brought into contact by closely placed interrupted sutures of cat-gut. Van Horn cat-gut was the only kind used. In clean cases the appendix was removed as follows: The meso appendix was perforated at the base by an artery forceps. The ligature drawn through and tied and the appendix freed to its base. A Lembert suture was placed in the caecum, beginning one-eighth of an inch from the center of the base of the appendix, then passing around one side of the base was completed in the caecum on the opposite side of the appendix. Traction was made on this and the appendix cut off flush with the bowel. The suture was then tied, which closes in the base of opening. A number of Lembert's were then passed for reinforcement. This leaves no stump, either inside or outside the caecum, and was done repeatedly in two minutes.

For gall bladder drainage, a small opening was made in the organ after the contents had been removed with a syringe. A long, soft rubber tube without fenestrae was fastened in by a single cat-gut suture, including the tube and the wall of the gall bladder.

A purse-string suture was then passed, inverting the edges of the organ on the tube, as in Senns' operation for gastrostomy. A small wick drain was made to enfold the point where the tube entered the bladder.

The organ was not sutured to any part of the abdominal wall. The abdominal wound was closed tightly around the tube.

In the after treatment, the tube is not disturbed until it comes away of its own accord.

Several points of interest in gynecological work were seen. In doing a supra-vaginal hysterectomy for fibroids, after delivering the uterus, he first made the incision to free the bladder and pushed this away with gauze. Then on one side a stout silk ligature was passed from the side of the uterus below the uterine artery, and the whole broad ligament with the arteries tied in one mass suture. Scissors were then used to cut rapidly down to the uterus above the ligature. After the other side had been treated in the same way, the amputation was quickly done with a scissors. The cervical stump closed with interrupted sutures and covered with peritoneum. This operation, together with the removal of the appendix and closure by the layer method, was completed in fifteen minutes.

That the mass suture, upon which the rapidity of the operation largely depends, is safe in some hands, at least, is shown by his claim that ninety-two hysterectomies were done at the German Hospital last year with only one death. On the other hand, the fact that one patient was brought back to the operating room ex-sanguinated during that same week, and was only saved by prompt reoperation, would remind us that brilliant operating may sometimes be at the expense of safety.

The technique of vaginal hysterectomy, as familiar to me, was varied by the employment of the Pryor clamps, instead of ligatures. These, as you know, are allowed to remain on the vessels for a week. The operation by this method took thirteen minutes.

Oxygen was freely administered from a small cylinder attached to the table. This has an inflatable rubber bag attached, which allows the oxygen to be delivered only during inspiration. The flow being stopped by the outward pressure of each expiration.

To describe all the interesting things we saw would make this paper much too long, but among other operations which added to the profit of our trip, were the Mayo operations for umbilical hernia, a conservative operation for a small ovarian cyst, an unconservative procedure, namely, the removal of the uterus on account of uncontrollable hemorrhage during an operation for pus tubes; the radical cure of double hernia in a woman; a ventro suspension, two trachelorrhaphies and a clever perineorrhaphy.

We also spent several hours each at the Mutter Museum of the College of Physicians, the Pathological Laboratory and Record Room of the German Hospital and at Dr. Noble's Hospital in Kensington.

In addition, we took in five theatres, were entertained one evening by Dr. Beyea at his new home on Spruce street, and spent Sunday afternoon on the old battlefield at Germantown.

On the whole, we felt that we did not waste much time; that while we saw nothing that made us feel ashamed of the work being done here in Wilkes-Barre, what we learned ought to be profitable to us and perhaps profitable to you even if imperfectly reported, especially if it stimulates some of you to go and do likewise.

RENAL CALCULUS.

CASE REPORTED.

BY DR. FRED. CORSS, KINGSTON, PA.

READ APRIL 4, 1906.

Pyonephrosis (?) and spontaneous escape of a renal calculus through the abdominal wall.

I first saw the subject of this report in January, 1904. Mrs. P., married, having adult children, a negative family history, is very pale, not jaundiced, in height about 5 feet 2 inches, weight, say 100 pounds. Has never had signs of hepatic or renal colic. Main evacuations normal. A painful tumor, oblong, 4 to 6 by 3 or 4 inches occupies right lumbar region. Positively refused to go to a hospital or to see a surgeon. At first the suspicion was a large gall bladder loaded with calculi. The next day, however, the tumor was smaller and softer and the urine was mixed with pus.

Diagnosis now was pyonephrosis with occasional blocking of the ureter. For many months the condition continued almost unchanged, the alternation of clear urine and pus in urine occurring about weekly.

About a year ago the tumor began externally to "point" and finally broke and discharged some pus and ichor which resembled urine, as if some part of the pelvis of the kidney continued active. Some two months ago the point of discharge showed a round red nipple.

The next morning a calculus was found in the dressings, weighing 69 grains, Troy, of an irregular obtuse ellipsoid form, a little flattened at the equator—not faceted. The long diameter is, 20 millemeters; short diameter, 15 m.

This case is unique in being the only one on record, I believe, of a renal calculus effecting a spontaneous escape.

The lady is now somewhat improved in general health and feels confident that there are no more calculi.

TREATMENT OF GONORRHOEAL OPHTHALMIA OF ADULTS, WITH SOLUTION OF PERMANGANATE OF POTASSIUM.

BY DR. LEWIS H. TAYLOR, WILKES-BARRE, PA.

READ APRIL 18, 1906.

Some of you may remember that with a paper which I presented to this Society late in 1904, giving some notes of clinical observations made during a summer vacation, I showed a set of glass tubes shaped like an inverted funnel which I had procured in Heidelberg. In my short stay at the clinic of that place I had the pleasure of meeting Prof. Leber, who kindly took me through his wards and showed me many cases of interest, but one which especially attracted my attention was a case of Gonorrhoeal Ophthalmia, which had been treated two or three days by a method which to me was entirely new. Prof. Leber used in this treatment copious irrigation with permanganate of potash, using the inverted funnel tube which, being inserted under the eyelids, allows the solution to reach all parts of the affected conjunctiva and cornea, and to thoroughly cleanse away all accumulation of pus. The result of treatment seemed so excellent that I procured a set of the glass tubes and determined to make use of the method at my first opportunity. The history of the following case will show the result:

E. W., aged 17, came to see me on November 11, 1905. The right eye was normal but the left eye had bad gonorrhoeal ophthalmia, lasting two days. The lids were much swollen and stiff and the eye closed, with a yellowish secretion oozing from between the closed lids, forming a typical picture of this disease, which any one who has had experience with such cases would not be liable to mistake for anything else. I cleansed the lids thoroughly with peroxide of hydrogen and boracic acid, applied argyrol to the conjuntiva and gave the patient boracic acid solution to use every half hour, and a 25%

solution of argyrol to drop in the eye every two hours. I also directed him to use cold compresses at home and to remain as quiet as possible. I also used atropia in the office. I saw him each day and he did fairly well under this treatment, but on November 14th, there was a very considerable discharge, the lids were tender and the conjunctiva had a tendency to bleed whenever the attempt was made to force the lids apart. I decided to use the permanganate solution, which I did in my office, having the patient sit with his head inclined over the wash basin, and from a fountain syringe, with the little glass funnel, I irrigated the eye thoroughly with a weak salution of permangenate of potash. This was decidedly painful, but I persisted in the application until I knew that the eye had been thoroughly irrigated. I could not tell the exact strength of the solution that I used, but I should think it was nearly a one per cent. or possibly stronger. On November 15th the patient was very much better than he had been at all, so I considered the permanganate washing a thorough success, notwithstanding that it had been very painful. November 16th he was doing very well; lids were quite flexible, not at all stiff; cornea perfectly clear. I could now evert the lids without trouble and applied a 50% solution of argyrol. He continued the application of argyrol at home, with thorough cleansing at short intervals with boracic acid solution. By the 24th of November he could go without the bandage and the lids were assuming their normal condition. On December 19th his vision was 20-XXX, reading some in 20-XX. His eye looked perfectly well, but the lid does not open quite so well as in the right eye. He was now discharged from treatment. In thinking over this case afterward, though thoroughly satisfied with the result, I was anxious to know the exact strength of solution used by Prof. Leber, and wrote to him asking where I could find an account of his method of treating this disease, and received from him the following reply: "Heidelberg, March 2, 1906. My honored colleague: The method of treatment of which you inquire did not originate with me, but with Dr. Kalt of Paris, who presented the same at the 24th annual ses-

sion of the Ophthalmological Society in Heidelberg, in 1895. I have only changed the solution somewhat by using 1-10 of 1% of the permanganate of potash in a ¾% salt solution. I recommended this change in a communication to the same association in 1897, and have since then been very well satisfied with the method. I am very glad to know that you have good results with the same. I send you in the same mail as this a reprint of my paper. With hearty greetings, I am very truly yours, Prof. Th. Leber."

As Dr. Leber's paper is not long, and as I believe the method a very important one, it seems to me not out of place to present to this Society a translation of the same. The title of which is: *"The Treatment of Gonorrhoeal Ophthalmia of Adults with Kalt's Method of Irrigation with weak solution of Permanganate of Potash,* by Prof. Th. Leber Heidelberg." "As Dr. Kalt presented to us two years ago his method of treatment of gonorrhoeal ophthalmia by copious irrigation, Prof. Dufour suggested very properly that this method would have to be thoroughly proven if it should hope to supersede application of nitrate of silver in the treatment of gonorrhoeal ophthalmia, the recognized method up to the present time, and by which method we were by no means always sure of saving the eye, even if we began the treatment in the commencement of the disease. The ophthalmia of the new born, according to my experience, yields readily to the regular application of a 2% to 3% of silver solution, together with thoroughly flushing with weak bichloride solution and with cold applications, so that at least we have no occasion here to recommend any other method.

"Although we have tried the treatment on the new born with the small glass funnel, according to Dr. Kalt's method, we have entirely given it up because it seems so difficult to use the application with very little children. On the other hand, this method in the treatment of the very dangerous ophthalmia of adults seems to me to deserve, decidedly, the preference over nitrate of silver.

"Although up to the present time (*i. e.* 1897) I have only treated two cases of this not very common disease, the impres-

sion was so favorable that I could not refrain from recommending to you a further trial of the same. The method has this advantage over others, that one can begin with it at once, as soon as the patient presents himself for treatment, which is well known cannot always be done with nitrate of silver in the treatment of adults. With children, I begin with the nitrate of silver at once, and do not believe the advice which is given very frequently to wait for a certain amount of abatement of the swelling of the mucous membrane. I believe that here, except perhaps in certain exceptional cases, one can succeed in making thorough applications to the whole mucous membrane, and in doing so I have nearly always found a good result to follow. But in adults the swelling is sometimes so great and the mucous membrane so stiff, that the application of nitrate of silver cannot be thoroughly made and in its attempt we sometimes do more harm than good. In such cases it is better to await the subsidence of the swelling, but in the meantime, however, the cornea may receive severe injury.

"A further advantage of the method is, that you do not have to increase the pain of the patient, but, on the contrary, with each application he feels the pain much less and his condition improving. I may add further, that with especial reference to the cornea I do not make this solution with the distilled water, but with a ¾% of common salt solution, and I have also made it somewhat weaker than originally recommended by Kalt, namely 1-10 of 1%. To each liter of the salt solution I add 10 C. C. of a 1% solution of permanganate of potash. As a rule, the irrigations are made three and sometimes four times a day, and a liter of the solution is used each time, but as improvement takes place both the amount and the frequency of the applications are lessened.

"In the first case, which came to me nearly two years ago, a very rapid and satisfactory improvement took place, such as was not to be expected through treatment by nitrate of silver, owing to the diphtheria-like condition and excessive secretion; an attempt to control the process in its early development by an application of 3% solution of silver nitrate entirely failed.

Although the case was a threatening one, all symptoms rapidly subsided, the cornea remained normal and recovery was complete in three weeks.

"The outcome of the second case was less favorable, but the method was not to blame for this, but rather the early appearance of a corneal ulcer, with the result that in the beginning of improvement of the blenorrhoea the frequency of the irrigations were lessened from fear of injuring the cornea.

"The patient stated that the day previous to his attack he had had a foreign body removed from the conjunctiva and as he denied having gonorrhoea, a thorough examination was made for a foreign body in vain, and then the nature of his illness was finally ascertained by a bodily examination. Through the removal of the foreign body and subsequent examinations it is not thought strange that the cornea suffered and in a couple of days a defect in the corneal epithelium was noticed. This, as Kalt has previously stated, took on a brownish coloring when the irrigation with permanganate was done, which gradually disappeared before the next irrigation.

"As the blenorrhoea had decidedly lessened after a week's treatment, and the epithelial defect without any infiltration of its base nevertheless became larger, the irrigations were used for one day only once; on the next day the epithelial defect was smaller, but the blenorrhea suddenly increased and the corneal wound developed into an ulcer. The irrigations were now resumed four times a day with most favorable results for the blenorrhoea as before; the corneal ulcer became clean but perforation could not be prevented. The perforation was small but healed with a leucoma, and later an iridectomy was performed.

"Even though this case did not result so favorably as the other it nevertheless strengthened my approval of the method of treatment, and I do not believe that so good a result, with the early appearance of corneal ulcer, could have been obtained by nitrate of silver. I believe I am safe therefore in commending this method to you for further trial.

"As to other methods of using permanganate in this disease,

as recommended by other specialists, I will not speak at length, as I have not tried them, but will merely remark that Hoor has stated that Stelwag had recommended a 3% solution for irrigation, that Hoor himself had used small irrigations frequently, repeated with a much weaker solution, and that Vian had recommended applications twice a day with a 10% solution.

"I can readily believe that the small and frequent irrigations recommended by Hoor, who applied them every quarter to half hour in the height of the disease, to be much more annoying to the patient than the method which uses the irrigation four times a day at the utmost.

"In addition we have used ice cold applications in the beginning of the disease, and also where the secretion was very profuse have used weak sublimate solution between the irrigations; or where atropin was indicated have dropped this in the eye every hour or two as needed."

In addition to the paper of Prof. Leber I looked up the original communication by Dr. Kalt, which was read at the Heidelberg meeting in 1895. He recommends slow irrigation by holding the irrigator 30 C. M. above the head of the patient, allowing seven or eight minutes at a sitting, and the same to be repeated two or three times a day. He now employs a 1-3000 solution instead of 1-5000, about a teaspoonful of a saturated solution of permanganate to each litre of water. Kalt first published his method in 1894. Trosseau and Chevalleran were then (1895) using this treatment to the exclusion of silver nitrate. Together they reported 166 cases with excellent results. "It is remarkable with what readiness the purulence diminishes. In six or seven days it is greatly reduced, in twelve to fifteen it is conquered."

He also recommends a similar treatment for the ophthalmia of infants, using a mixed solution of permanganate and weak bichloride.

Albert Terson in *Archives d'Ophthalmologie,* as early as 1892, recommended irrigations of permanganate, but without abandoning the classic treatment. He used 1-2000 or 1-5000, the same as for the urethra, according to the date and degree

of the malady. He used a half liter every eight hours night and day but without prejudice to other means.

Fortunately we do not have many cases of this disease to treat, and unfortunately we do not always see them in the earlier stages of the disease. I have not seen many cases, and have succeeded in curing the most of them by the old method of nitrate of silver applications, with frequent cleansing with boracic acid. I recall, however, two eyes that were lost; one that came to me late in the disease and the other reasonably early. In the latter, all seemed to be going well for several days when a sudden and unexpected perforation ruined the eye.

If I am unfortunate enough to have more cases of this unfortunate trouble to treat I shall certainly give the permanganate irrigation a fair trial.

ADVANTAGES AND DISADVANTAGES OF THE LEUKOCYTE COUNT.

BY DR. A. L. HAUSLOHNER, WILKES-BARRE, PA.

READ MAY 16, 1906.

Knowing the composition of the blood and the formation of the white blood cell, the leukocyte, I will not mention much about that. Now, the leukocyte, the normal count, is from seven thousand to eight thousand in a cubic micrometer. The varieties are several and the classifications are, however, difficult. I will mention some and their classifications. Taking the small mono-nuclear leukocyte, it is about the size of a red blood corpuscle, has a large nucleus, few granules, which, by the aid of methylene blue and heat, show very plainly. Of these leukocytes, there are from twenty to twenty-five per cent. in the normal count. The large mono-nuclear leukocytes are from two to three times the size of a red blood corpuscle, the nucleus is poorer in chromatin.

Transitional leukocytes are similar to the last but differ that the nucleus is little indurated. The polymorpho-nuclear leukocytes which are greatest in number; the nucleus here is

elongated and in various curves. The curves of S, V, X and Z are rich in chromatin. Of these there are from sixty to seventy per cent. in the normal leukocytes; of these I have seen from eighty to ninety per cent. in abnormal.

Morpho leukocytes, which are from two to three times the size of a red corpuscle, are very few in number, if at all, in the normal blood, but abundant in leukemia. Having made an examination in one case of leukemia, and one of pernicious anemia, both of which died, the morpho leukocytes were quite numerous.

Eosinophiles are larger than the poly-morpho-nuclear and of these there are but one to four per cent. in the leukocytes.

Now, the composition of a leukocyte is known to contain leukonuclein, histon, lecithin, cholesterin, glycogen, and fat.

Now, we have an increase of leukocytes in infectious diseases and inflammatory conditions of tissue. And not alone have we a leukocytosis in these, but we also have them under different conditions where it does not indicate pus. Such as giving quinine will increase the leukocyte count quite high.

Patient coming into the hospital with pain around the umbilicus, high temperature, rapid pulse, one would soon come to the conclusion that there was some damage being done in the abdomen. Leukocyte taken and quite high running from ten to fifteen thousand. Had four of this kind of cases, and after emptying the stomach of a lot of meat, buns and sauer kraut, the leukocytes dropped to eight thousand and the fever disappeared. Also making about two dozen examinations of patient after a bath, the leukocyte count would run up to eleven thousand and drop down to seven thousand in four hours.

In pregnancy, examining about a dozen cases, the leukocyte count in the last month would increase from twelve to fifteen thousand. After labor, it would increase to eighteen thousand, then in four days, drop down to fifteen thousand, and in a week to eight thousand. If at this time the leukocytes would not drop upon close examination, would find trouble beginning in the mammary glands.

Now, I shall mention some operative cases and the advantages of the leukocyte count.

Increase of leukocytes in high temperature is good, if temperature is high and leukocytes are diminished the case is fatal and is caused by deficient phagocytosis. Observing the same I found, if patient reacted from operation, with high temperature and after getting rid of a lot of pus, the leukocytes would be the same, but in twelve hours would decrease very slowly; the patient would get well. While on the other hand, if the patient would not react very well, and the leukocytes would drop all at once from about twenty-five thousand to ten thousand, the patient would not recover.

First case.—Diagnosis, appendicitis; boy, aged ten years. Before operation leukocyte count, thirty-five thousand; six hours after, thirty-six thousand, well defined tumor on left side. Operated on and found cavity filled with pus; cavity walled off, appendix not looked for. Twelve hours after leukocytosis was thirty-one thousand; twenty-four hours leukocytosis was twenty-eight thousand; thirty-four hours after leukocytosis was twenty-seven thousand; forty-eight hours after leukocytosis was twenty-six thousand; seven days later leukocytosis was ten thousand. Patient recovered.

Second case.—Diagnosis, appendicitis; M. R., aged six years; leukocyte count before operation, twenty-five thousand; no tumor, but greatly distended. Operated and found belly full of pus, and gangrene appendix. Twelve hours after, leukocytes dropped to fifteen thousand. Patient died twenty-four hours later.

Third case.—Diagnosis, appendicitis. Before operation leukocytes eighteen thousand, four hundred thirty-seven. Twenty-four hours after this count, twenty thousand. Operated the next day, found ruptured appendix which was walled off and cavity filled with pus. Twenty-four hours after leukocytes dropped to twelve thousand six hundred and forty-one. Twenty-four hours, ten thousand; patient doing well, when seven days after, the patient complained of pain in region of umbilicus; temperature high, 103°, and pulse a little fast;

leukocyte count showed twenty thousand nine hundred and thirty-seven; twenty-four hours after, showed twenty-six thousand eight hundred and seventy-five; decided to take him up next day and open him up again; meantime, giving him solution of citrate of magnesia. Next day, the pain disappeared and the tympanitis also; leukocyte count taken and it dropped to eight thousand one hundred and twenty-five. Four days after the discharge ceased and the wound closed. Next day we found that a friend, visiting him, had given some pop corn, but was afraid to tell us.

Fourth case.—Mr. H., diagnosis, appendicitis. On admission, leukocyte count twenty-two to fifty thousand; twelve hours after, leukocyte count, twenty-three thousand. Operated and found walled off abscess and inflamed appendix. After operation the leukocyte count was twenty thousand seven hundred and fifty; twenty-four hours after, eighteen thousand. Four days after, nine thousand and fifty. Patient recovered.

BOSTON MEDICAL LIBRARY

Fifth case.—Diagnosis, appendicitis; age, thirteen. On admission the leukocyte count was twenty-six thousand two hundred and twelve. Operated. Cavity walled off and filled with inflamed appendix and pus. Twelve hours after, leukocyte count was twenty thousand; twenty-four hours after, six teen thousand; three days after, nine thousand eight hundred and seventy. Patient recovered.

Sixth Case.—Diagnosis, appendicitis; on admission, leukocyte count eight thousand four hundred and thirty-seven. Operated and found appendix slightly congested; twenty-four hours after leukocyte count was seven thousand five hundred. Patient recovered.

Seventh case.—C. H.; diagnosis, appendicitis; on adminsion leukocyte count eighteen thousand seven hundred and fifty. Operated and found gangrene appendix; twenty-four hours after, leukocyte count sixteen thousand two hundred and thirteen; twenty-four hours after fifteen thousand; four days after, leukocyte count fourteen thousand three hundred and seventy-five. Patient recovered.

Eighth case.—Diagnosis, appendicitis; on admission, leukocyte count fifteen thousand three hundred and twelve; operated and found the appendix very large and filled with pus but not ruptured. Twenty-four hours after, leukocyte fourteen thousand; three days after, leukocyte count ten thousand; patient recovered.

Ninth case.—Miss C.; diagnosis, appendicitis; age, fifteen; on admission, leukocyte count sixteen thousand four hundred; twenty-four hours after, leukocyte count was fourteen thousand; twenty-four hours after, leukocyte count was twelve thousand; two days after, leukocyte count was eight thousand eight hundred; recovered without operation.

Tenth case.—Miss D.; age, fifteen; on admission, leukocyte count was eight thousand seven hundred and fifty; operated and found appendix normal; forty-eight hours after leukocyte count was eight thousand; patient recovered.

Eleventh case.—Mrs. M.; symptoms of peritonitis; luekocyte count thirty-two thousand; twenty-four hours after, leukocyte count thirty-five thousand; twenty-four hours after the patient died.

Twelfth case.—Diagnosis, appendicitis; leukocyte count twelve thousand; operated and found appendix little inflamed and no pus; twenty-four hours after leukocyte count ten thousand; patient recovered.

Thirteenth case.—Diagnosis, pus tubes; on admission, leukoycte count fifteen thousand four hundred; operated and found left tube pus; twenty-four hours after leukocyte count fifteen thousand; twenty-four hours after, leukocyte count fourteen thousand five hundred; four days later, leukocyte count ten thousand.

Examined ten cases of tumor in pelvis, leukocyte count fifteen thousand to twenty thousand; operated and found pus tubes in all.

Diagnosis, pyelitis. On admission, leukocyte count sixty thousand; twenty-four hours later sixty-one thousand. Not operated on; patient died forty-eight hours later. Posted him

and found large abscess in lumbar region, involving the kidneys.

Had two cases of ovarian cyst. Of each, more than two gallons of clear fluid was removed, and each only showed a leukocyte count of six thousand two hundred and fifty and seven thousand.

Mrs. S.; diagnosis, large tumor in pelvis posteriorly; leukocyte count nine thousand three hundred and forty-eight. Post vaginal puncture revealed fluid, blood and a little trace of pus. Twelve hours after, leukocyte count ten thousand; twelve hours later, leukocyte count nine thousand; five days after, leukocyte count seven thousand five hundred; discharge stopped.

Have about two dozen cases just the same, and as you see case with a leukocyte count up to twelve thousand, the appendix was not ruptured, although it had pus in it. Above fifteen thousand the appendix was ruptured and abscess cavity. At twenty thousand there was a gangrenous appendix.

DaCosta mentions that leukocyte count from fifteen thousand to twenty thousand indicates abscess, gangrene or peritonitis.

From ten thousand to seventeen thousand cannot be depended upon but rarely, but if from fifteen thousand to twenty thousand the above is indicated.

A high stationary or increased leukocytosis demands an operation, no matter what the clinical symptoms may be.

Blassburg considers that change in leukocytosis can be made in diagnosis and prognosis and determining operation only to a limited degree.

Mention just a few more cases which I think are interesting.

Three cases of carcinoma of stomach; leukocyte count in each was twenty thousand, twenty-three thousand and twenty-six thousand.

Diagnosis, obstruction of the bowel. On admission leukocyte count nine thousand eight hundred and fifty-six; twenty-four hours after ten thousand nine hundred and thirty-one;

twelve hours after twelve thousand. Operated and found bowel in internal abdomen ring and greatly contracted and bowel congested. After returning the bowel, the circulation returned and became normal. Twenty-four hours after operation, leukocyte count nine thousand five hundred; three days after, leukocyte count eight thousand. Patient recovered.

Gunshot wound; twenty-two caliber bullet entered in the back below the last rib, three inches to right of spine. On admission, leukocyte count eight thousand seven hundred and fifty; twenty-four hours after, leukocyte count ten thousand six hundred and twenty-five. Operated and found bullet in abdomen. Found no perforation of intestines, but here and there traces of serous exudate; twelve hours after, leukocyte count eighteen thousand seven hundred and fifty; six hours after twenty thousand. Patient died. Patient very uneasy, high fever and leukocyte count going up.

Gunshot wound; shot himself in the forehead, a little above the nose; on admission no serious symptoms; probed, but could not locate the ball; leukocyte count thirteen thousand seven hundred and fifty; six hours after, thirteen thousand; six hours after, twelve thousand two hundred and twelve; twenty-four hours later, eight thousand six hundred and fifty. Knowing then that the bullet must simply be imbedded in the skull, operated and found the skull unusually thick and a thirty-eight caliber bullet lodged in the frontal sinus.

Mrs. C.; diagnosis, ectopic gestation; on admission, leukocyte count six thousand eight hundred and twenty; red blood count two million nine hundred thousand; six hours after, leukocyte count five thousand, red cells one million nine hundred thousand; showed loss of blood; taken to operating room, found foetus in abdomen with rupture. Twelve hours after, leukocyte count ten thousand; red cell two million; twelve hours after, leukocyte count nine thousand; red cell two million five hundred thousand. Seven days after, leukocyte five thousand; red cell three million five hundred thousand.

Another case, similar, in which the red blood count diminished in a marked degree.

Accident case; diagnosis, fracture of the pelvis, and rupture of the bladder. On admission, leukocyte count fourteen thousand five hundred; twenty-four hours later fifteen thousand seven hundred and fifty; twenty-four hours later, sixteen thousand seven hundred and fifty; twenty-four hours later, sixteen thousand; next day the patient died. Post mortem revealed fracture of pelvis and rupture of the bladder near the anterior. No signs of peritonitis.

Accident case; compound fracture of pelvis, the ischium and ascending ramus, lacerated penis and scrotum and ruptured bladder. On admission, leukocyte count twenty-two thousand five hundred; twenty-four hours later, twenty-five thousand; and twenty-four hours later twenty-eight thousand. Patient died that night. No sign of peritonitis. Posted.

Stab wound of abdomen. On admission, leukocyte count fourteen thousand; twenty-four hours later eighteen thousand; twenty-four later twenty thousand. Third day he died. Post mortem showed the wound through the serous coat of intestine and signs of peritonitis.

Had six cases of fracture of pelvis. Leukocyte count twelve thousand to fifteen thousand; all got well but two.

Four cases of empyema.

REPORT ON THE MEETINGS OF THE NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS, MAY 16–18, 1906, AND THE AMERICAN PEDIATRIC SOCIETY IN ATLANTIC CITY, MAY 30-31.

BY DR. CHARLES H. MINER, WILKES-BARRE, PA.

READ JUNE 2, 1906.

I arrived in Washington Wednesday afternoon, May 16th, in time to attend the last meeting of the Association of American Physicians, and heard the report and discussion of a very remarkable paper by Doctors Rogers and Beebe, which was said to be the feature of the meetings.

It was on the treatment of exophthalmic goitre by a specific cytotoxin and possibly antitoxin. Dr. Rogers is the clinician and Beebe is the laboratory expert.

The serum is prepared by injecting rabbits with the nucleo proteids and thyro globulin from thyroids of cases of exophthalmic goitre or from organs of normal individuals.

The investigation and study was started by Rogers, who had a serious case of Grave's disease in his own family, when he suggested to Beebe that he try to produce an antitoxin for the disease.

Beebe secured his first glands at autopsy on a case of Grave's disease.

The serum was produced by the use of rabbits and Dr. Rogers tried it on his patient and promptly cured her. Since then they have been producing as much serum as possible and obtain two fresh glands a week from the Mayo's at Rochester, Minn.

Some remarkable results have been obtained not only by Rogers, but by others who have been supplied with serum. In a few acute fulminating cases the effect has been almost immediate, in the more chronic types a relatively long time is needed for the serum to act.

Rogers reports 41 personal cases with 8 cures, 25 improved, 6 no results and 2 deaths. Of 28 cases treated by other physi-

cians, 3 were cured, 16 improved and 9 were not benefitted. If this method of treatment stands the test of time and yields what it now promises, it is a remarkable advance in serum treatment.

The serum is not yet obtainable for general use.

On Wednesday evening there was a joint meeting of the "Association of American Physicians," and of the National Association for the Study and Prevention of Tuberculosis, at which Dr. Simon Flexner, of Carnegie Institute, read a paper on "Immunity in Tuberculosis." He said, among other things, that the attempts to limit the disease in man must depend largely on the control of methods of infection. The reduction of 35 per cent. in the mortality from the disease in New York since 1886, is a great encouragement. Immunity has been attempted by various products. Tuberculin will increase the resistance in some animals, but not in a marked manner. Dead bacilli produce a reaction, but the body is still susceptible to the living organism. The only immunity worthy of the name has been produced by the inoculation of living bacilli. Acquired immunity does not appear in man, yet there appears to be a refractory condition that is increased by infections, the human body possessing a strong inherent capacity to overcome the action of the tubercle bacilli.

He also spoke of Behring's attempts to produce resistance in cattle.

The work of the National Association proper was taken up Thursday morning in different sections.

UNDER THE SOCIOLOGICAL SECTION.

Dr. Samuel Hopkins Adams read a very interesting paper on Tuberculosis Nostrums.

He said there are two classes of nostrums advertised in the daily papers as consumptive cures.

DESCRIBES OBJECTIONAL CLASS.

One of these classes might be described, he said, as comparatively harmless, and consisted mostly of a mixture of inert drugs that had no effect one way or the other. But the most

active class was made up on a basis of opium, hasheesh, cheap whiskey and cocaine. This class of "remedy," he said, is an active poison in any case, but especially so in the case of a consumptive patient. He said that one might imagine, from reading the advertisements, that the secret of curing consumption was an open one; that the only man who could not do it was a reputable physician in good standing. He then named four or five firms as the most flagrant offenders in what he termed the pernicious nature of their so-called consumption cures, and said that the public did not seem to realize that there is no specific for consumption and that the only effect of the patent nostrum was perhaps to sooth the cough and lull the patients into a false sense of ease and security, after which there was a sudden and awful breakdown of the system and the end was more rapid than if the disease had been left alone.

INDORSE DR. ADAMS.

Dr. Frank Billings of Chicago, and Dr. J. Willoughby Irwin of Philadelphia, took part in the discussion that followed. Dr. Billings said he was willing to go farther than Dr. Adams, and declared that there are none of the nostrum compounds that are harmless. All he mentioned are harmful, in one way or another, either as active poisons or from their sense of false security that they give the patient. He said also that there are many proprietary medicines manufactured by firms and sold to the medical profession as specific compounds that are almost as bad as the straight patent medicines themselves. He said he had seen preparations sold over the counter which, a few years ago, were simply dispensed from the manufacturer to the physician.

The manufacturers got the doctors to act unconsciously as their advertising and distributing agents, and then put the drug out on the popular market.

It is true, he said, the public is becoming slowly educated in the matter of tuberculosis, but that it is very slow. Twenty-five years ago the medical profession honestly believed that there was a specific for consumption, and the symptoms were treated and various drug remedies were given. But now that

the doctor has learned better, the general public is about where the medical profession was a quarter of a century ago. He advocated the spread of education in the nature and treatment of consumption among all classes of the people, and especially among the teachers of the public schools.

Dr. Lawrence F. Flick read the vice-president's address in the absence of Dr. Briggs, the president. He said, among other things:

"Could the disastrous influence of tuberculosis upon any community be presented to the public in a concrete form in the manner in which, for instance, the San Francisco earthquake was presented; could all the consumptives be marshaled into line and their suffering thus be presented to the world at a glance, the response for the amelioration of that suffering would be as generous as that which the world has just witnessed for California."

The measures by which tuberculosis is to be stamped out have been fully outlined and clearly defined. There must be hospital accommodations for all poor consumptives who cannot recover and who cannot be made harmless at home; there must be dispensaries for all walking cases of tuberculosis who are too poor to employ expert services and who cannot be treated in their homes without prejudice to others; there must be sanatoria for all poor consumptives who are still in the curable stage of the disease and who cannot be successfully treated in their homes; there must be convalescent farms for tuberculosis subjects who have been restored to physical well-being, but need hardening up under direction and supervision; there must be experts in the prevention and treatment of tuberculosis, and these must be trained in our medical schools and in our post-graduate schools; there must be control of tuberculosis in domestic animals and prevention of intercommunication of tuberculosis between human beings and animals; there must be reconstruction of boards of health to bring them into line with modern ideas about the prevention of disease; there must be co-ordination of societies interested in philanthropic and sociological work in the interest of the

poor and the laboring classes, and there must be a remodeling of laws and customs in harmony with the new ideas of preventive medicine. This is indeed a large program, but it can be carried out.

Under the pathological and bacteriological section there were many valuable papers by the staff of the Phipps Institute in Philadelphia, and by Dr. Trudeau's staff at Saranac Lake.

Dr. Trudeau read a paper on "Therapeutic Use of Tuberculin Combined with Sanatorium Treatment.

He said it was to be regretted that there was no standard strength for the preparation and that there was so little known positively about the action and the strength of the dose that would give the best results. He said, however, that at present the matter would have to be left largely to the skill and judgment of the physician in each case. He recommended the use of small doses and a carful watch for symptoms so that if deleterious effects were noted the treatment could be retarded and the patient's general condition given a chance to pick up. He said that the statistics of treatment were not yet large enough or of such unquestioned authority as to make them entirely reliable for a guide, but, that they seemed to indicate more advantageous results in the treatment of advanced cases than they did in incipient cases.

Other members of the society had had very little experience with tuberculin and it was not recommended for general use by the profession at large.

Under the section of Tuberculosis in Children, Dr. Bovaird spoke on the sources of infection as displayed by post mortem findings. He said that the result of autopsies showed that infection came almost solely from two sources, the breathing of tubercular matter or its ingestion with food. He thought it was very remarkable how few cases of abdominal and intestinal tuberculosis are found even where the lungs are seriously affected and where the patient must have been swallowing millions of bacilli every day. For this reason he thought that the possibility of infection from drinking tubercular milk was a very small one.

Just here Dr. Ravenel of the Phipps Institute, who attacked Koch in London, when he claimed that the human and bovine bacilli were absolutely distinct, entered and opposed Dr. Bovaird most emphatically. He claimed that intestinal tuberculosis was quite frequent in children, and that the danger of drinking milk from tuberculosis cattle was very great, especially by children and infants. He quoted the recent reports of investigation by the English and German governments to prove his contention, and I must say that he had the best of the argument.

Dr. Charles L. Minor of Ashville, read a paper on "Use and Abuse of Pulmonary Gymnastics."

He claimed that light breathing exercises were of decided advantage in selected cases.

Dr. Bridge of Los Angeles, opposed his views completely and claimed that rest was the cure in surgical tuberculosis and that the same was true in pulmonary cases. He thought that nature would regulate the proper breathing, provided the patient had pure air to breathe. The consensus of opinion seemed to be that pulmonary gymnastics should be used as a preventative of tuberculosis, but were seldom of use in the cure of the disease.

Dr. Flick read a paper on "The Relative Value of the Home Treatment of Tuberculosis," which started a timely discussion.

He claimed that the disadvantage of sending patients far from their homes were:

1. Expense.
2. Home sickness.
3. Absence of the advice of experts in their own cities.

The members from the health resorts ridiculed his reasons and said homesickness very seldom occurred, in fact, most patients liked to get away from home and asked if a physician developed T. B. would he remain in the city if he could get away?

They admitted that there were many who could not get away and of course in their case the only and proper treatment was the home treatment.

Dr. Brown of Saranac Lake, read a paper on the "Treatment of Haemoptysis," and advised nitro glycerine as a preventative, amyl nitrite, by inhalation, and morphia and sodii nitrite hypodermically, and ice bag over the heart during the attack. He said the bleeding often occurs during the early morning hours and when it is expected he advises morphia and sodii nitrite at midnight.

UNDER THE SURGICAL SECTION.

Dr. Charles H. Mayo of Rochester, Minn., read a paper on "Tubercular Glands of the Neck." He advised complete removal and reported on two hundred cases that he had operated on. In the discussion he blamed the tonsils for carrying the infection and said that he considered the tonsils ten times as dangerous as the appendix. He said that 20% of the tonsils removed in Chicago were tubercular. He said also that there were very few children who do not have enlarged tonsillar glands.

On Wednesday, May 30, I attended, on invitation from Dr. Alfred Hand, the American Pediatric Society at Atlantic City. The most prominent children specialists and teachers were there, as Drs. Holt, Jacobi, Rotch, Griffith, Starr, and many others.

Dr. Holt read a paper on "Some Phases of the Feeding Problem," and recommended that there never should be more than 4% of fat in modified milk for infant feeding.

Dr. Winters, Professor of children's diseases at the Cornell Medical School and who opposes the use of diphtheria antitoxin, in the discussion, did not agree with Dr. Holt, and said that he often used as high as 6-7% of fat.

During the discussion on this and many other papers on teaching Scientific Infant Feeding, Dr. Westcott and others elaborated formula at the blackboard that no one could follow.

Old Dr. Jacobi, who graduated from Bonn University in 1851, and who presided at the meetings, told me later that when a man went to the blackboard and wrote milk formula,

he made him think of a person standing before a mirror admiring himself. Of course scientific percentage feeding has been developed years since Dr. Jacobi was a student.

I asked him what he did use for young babies. He said, take one part good cow's milk, two parts barley or oat meal water, heat it to the boiling point and add some sugar to sweeten.

Dr. Freeman of New York, read a paper on "The Relationship of Weight and Length in Infancy," and proved by charts that babies gain in length faster when they gain in weight, and it has more influence than the age or increase in age. In other words, if you want a child to grow in height you must make it grow in weight.

All the papers were valuable and very interesting.

Dr. W. P. Northrup of New York, was down for a paper on "The 23 Cure." Everyone was very anxious to know what he did mean, and it proved to be that he was writing on the fresh air treatment for children, and changed his title to the 23-hour cure.

He told how he took children at the Presbyterian Hospital very low with pneumonia, to the roof during the winter months, and that their improvement was immediate and almost miraculous.

He claimed that the 23-hour cure was good for most acute diseases, and surely in convalescence from all acute infections and in difficult feeding cases in infants.

Between the time spent at the two conventions, I spent ten days in Philadelphia at the hospital and clinics on medical subjects, and especially in diseases of the stomach.

It seemed to me that I had been hearing and studying one subject when attending the tuberculosis congress, the pediatric convention and clinics and lectures on diseases of the stomach. It was everywhere a problem of nutrition, and to my mind the most important subject now before the medical world, is nutrition, the proper nourishment of all our patients, no matter what their complaint.

SCARLET FEVER COMPLICATED WITH OTITIS AND SYMMETRICAL GANGRENEDEATH.

A girl 4 years old, always healthy, taken sick January 30, 1906, with vomiting and fever, and rash appeared on the next day. Fever lasted till January 10th, and the highest point reached was 104. She complained of pain in the right ear on the eleventh day, and on the next day the drum ruptured. She had fever again for three days and reached as high as 101⅗ degrees. On the eighteenth day of the disease, after a restless night with increased fever, two black spots appeared on the anterior tibial region of both legs; by eleven o'clock in the evening it had spread six inches up both legs. The urine was loaded with albumen and only a small quantity was secreted. The next day gangrenous spots appeared on the lobe of the right ear, on both thighs and feet. The child died that night, forty-eight hours after the first appearance of gangrene. The whole leg had become discolored and the skin ruptured in one or two places.

Holt and Osler mentioned the occurrance of gangrene as a complication of scarlet fever.

Holt says, "Cases of symmentrical gangrene after scarlet fever have been reported by Nelson and others."

The parts generally affected are the bottocks, thighs and arms, but it may occur almost anywhere.

The pathology of these cases is obscure. The process usually begins in several places simultaneously or in rapid succession, and advances steadily until death occurs.

SCARLET FEVER.

BY DR. BOYD DODSON, WILKES-BARRE, PA.

READ JUNE 6, 1906.

Scarlet fever is an acute, contagious and infectious disease, characterized by sudden onset with high fever, headache, sore throat, vomiting, and sometimes convulsions, followed by a punctiform, erythematous rash, which quickly spreads over the entire body, and which later is followed by more or less desquamation, according to the intensity of the inflammation.

It is a disease of childhood and early adult life, rarely seen in extreme infancy or in old age.

The text-books classify scarlet fever cases as mild, moderately severe, severe, and malignant; or as simple scarletina, scarletina anginosa, scarletina maligna, hemorrhagic scarletina, and irregular or aberrant scarletina. Simple scarletina and scarletina anginosa are the common types of the disease, to a consideration of which this paper is limited.

It is the variability as regards the severity of type met with in different patients which makes it the more to be dreaded as to contagion; for, who among our number, has not been called to patients who were suffering from cervical abscess, nephritis, or middle ear disease, with a history of sore throat, a little rash, a slight desquamation, who were regular in their attendance at school; how many were in attendance upon cases of contagious disease in families where, against you injunction, other members were allowed to take part in the recent production of the "Crystal Slipper" in this city? How much anxiety and sorrow is brought to our doors by the perverseness or criminal indifference of those who should, and often do, know better.

There are many reasons for believing that scarlet fever is caused by a micro-organism, the identity of which is not known. Streptococci are found in nearly all cases, associated sometimes with staphylococci, diplococci, or the Klebs-Loeffler bacillus.

Dr. Welch sums up the presence of streptococci in these cases as follows: He says, "It would seem that the relationship of the streptococcus to scarlet fever and to small-pox is quite similar. It gives rise in both to numerous complications and not infrequently leads to a fatal termination; the proof that it is not the cause of small-pox is easy of demonstration; the proposition that it bears no etiological relationship to scarletina is more difficult to disprove. It appears reasonable that in certain infectious diseases, particularly scarletina and small-pox, the resisting powers of the tissues are so weakened against the streptococcus that this organism invades the system and works its noxious effects.

"Until the streptococcus found in scarlet fever is shown to possess properties which trenchantly distinguish it from other streptococci, and until this disease is experimentally produced by inoculation of a pure culture of such an organism, the belief in the casual relationship of streptococcus to scarlet fever cannot be maintained."

What ever may be the cause of scarlet fever, it is commonly accepted that the point of inoculation or invasion is the throat and upper air-passages. Scarlet fever poison may infect wounds or burns, a number of cases being reported where it followed operations, such as circumcision, lithotomy, removal of tonsils, adenoids, cervical glands, etc.

It may occur in puerperal subjects, in which cases, in my experience, it did not affect the new born.

For many years it has been claimed that the danger of infection is greatest during the period of desquamation; this may still be good argument in maintaining the proper isolation of the patient, but to me it seems extremely doubtful that the desquamated epithelium is a source of infection after the discharge from the throat, nose, and ears have ceased, and after the proper cleansing of the patient's body; I believe the source of infection is the discharge from the pharynx, nose, ears, or suppurating glands.

The period of incubation, or the time elapsing between the date of infection and the appearance of first symptoms, varies

from three to seven days. The earliest symptoms are fever, headache, vomiting, sore throat, sometimes convulsions.

The intensity of the symptoms varies according to the severity of the epidemic and the character of the complications; not infrequently may be seen in a family several children presenting symptoms of scarlet fever in so mild a form that they are with difficulty confined to the house; in the same family, at the same time, may be seen a case typical of the anginose variety, so graphically described by Drs. Welch and Schamberg in the following language "This form of the disease is characterized by an excessive development of all of the symptoms, but with particular severity of the throat manifestations. * * * The child lies with the head back to prevent the pressure of the swollen glands from compromising the breathing; the neck is greatly tumified, the overlying skin stretched and glazed, the commissures of the mouth fissured and covered with bloodcrusts, the nose discharging a sanguinopurulent matter, the eyelids swollen, and the ears expelling a thin ichorous pus. Indeed, every orifice of the face gives issue to a putrid and foul-smelling discharge which contaminates the atmosphere about the patient with the stench. The general symptoms are those of a profound septicaemia."

Were not the title of this paper already announced you would say, That is a description of a typical case of diphtheria; so it is. In the not very distant past, I believe, innumerable cases answering the above description have terminated fatally because the medical attendant failed to recognize the co-existence of scarlet fever and true diphtheria.

Some authors claim that scarlet fever more often develops in the course of diphtheria than the reverse; this may be true, but the reverse occurs sufficiently often to justify the naming of diphtheria as a not infrequent complication of scarlet fever.

Among other complication we have adenitis, cellulitis, middle ear disease, albumenuria, acute nephritis, erysipelas, and acute rheumatism.

Holt mentions measles, varicella, variola, erysipelas, and typhoid fever as occurring simultaneously with scarlet fever.

A typical case presents no difficulties as to diagnosis; the sudden onset with high fever, sore throat, early eruption and subsequent desquamation distinguishes it from measles, in which the above symptoms are absent, and which disease is usually preceded and accompanied by catarrhal symptoms. Diphtheria is of a gradual invasion, greater prostration, and usually no eruption.

In cases with severe throat symptoms and doubtful eruptions, cultures should be made as early as possible and repeated if first examination is not decisive. Osler says: "Scarlet fever and diphtheria may co-exist, but in a case presenting widespread erythema and extensive membraneous angina, with Loeffler's bacillus, it would puzzle Hypocrates to say whether the two diseases co-existed, or whether it was only an intense scarletinal rash in diphtheria."

In the treatment of scarlet fever patients much attention should be given to prophylaxis; no matter how mild a case may be, I believe in strict quarantine; children who are well should not be allowed in the room, and the physician and attendants should be ever mindful of the danger of carrying the poison to others. All discharges and excreta should be thoroughly disinfected, and at the proper time the room should be disinfected with germicide agents and fumigated, not by a carpenter, laborer, or ward heeler, but by one who has a practical scientific knowledge of what he is doing.

There is no specific treatment for scarlet fever; symptoms and complications are treated as such. High temperature is treated by applications of cold, the administration of febrifuge mixtures and antipyretics. Throat and nasal symptoms are treated by the use of mild antiseptic solutions, as boric acid, chlorate of potash, Dobell's solution, listerine, euthymol, hydrogen peroxide, or solutions of some of the newer preparations of silver.

The condition of the kidneys should be watched, and should albumenuria or symptoms of acute nephritis develop, restrict patient to milk diet, and give infusion of digitalis with ammo-

nium or potassium acetate, calomel for its action on the bowels and kidneys, and application of hot poultices over the kidneys.

The condition of the heart may require stimulants, of which brandy or whisky, digitalis, strychnia, or nitroglycerine are commonly used.

Glandular enlargement at the angle of the jaw, adenitis or cellulitis, is best treated by ice-bag, by free incision upon first suspicion of pus-formation, followed by application of hot poultices.

The ear trouble is treated by applications of dry heat, and the pain relieved by a few drops of a 4% solution of cocaine, or the administration of opiates. Incision of the drum-membrane relieves tension and permits the escape of pent up blood or pus; this should be followed by careful syringing with warm sterile water or boric acid solution.

Persistent tenderness over the mastoid bone, especially if there is redness and swelling which causes the ear to stand out, calls for free incision or the more radical mastoid operation.

The anti-streptococcus serum has not done all that might be expected of it, and many writers are sceptical as to its merits. I have used it in six cases, of which five recovered, but I am not confident that they might not have recovered without it.

Of the anti-diphtheritic serum I can speak most confidently; nothing in the practice of medicine has been more gratifying to me than the result following its administration in several cases where the diagnosis of diphtheria complicating scarlet fever was verified, not by bacteriological examination, but by the prompt amelioration of conditions which, without antitoxin, we have learned to regard as hopeless.

TUBERCULOSIS WORK IN EUROPE.

BY DR. JOSEPH WALSH,
READ JUNE 20, 1906.
President of the Pennsylvania Society for the Prevention of Tuberculosis.

At the International Congress on Tuberculosis, held in Paris last October, there were over 3,000 delegates from all parts of the world.

Discussion revealed no new method or specific in the treatment of tuberculosis, and it was generally agreed that sufficient rest, sufficient fresh air and sufficient good nourishment were the only elements in the treatment at present known to science.

Behring's announcement that he expected soon to have a serum which would at least prevent tuberculosis was considered premature by the majority of men, and the ones I personally talked with felt sorry that any statement had been made.

The official seal, as it were, of the congress was put on various efforts towards the cure and prevention of tuberculosis, namely, sanatoria for adults and for children, hospitals for advanced cases, supporting dispensaries, park convalescent camps (day camps) and societies for the education of the public. In addition to hearing the discussions as to the work done in the various countries, I had the pleasure of investigating, personally, the work done in England, France and Germany.

Sanatoria are found in all the countries of Europe. The greatest number of them are found in Germany, where the sanatorium idea originated, the smallest number in France, the natural antagonist to Germany and German ideas.

The first sanatorium in the world was founded by Brehmer at Goerbersdorf about 1860, and it is within the last forty years that they have sprung up elsewhere.

It is interesting to note that the first man in our own country to advocate the curability of tuberculosis, namely, Benjamin Rush, was ably seconded by the greatest layman of his time, namely, Benjamin Franklin; and again that the founda-

tion of Brehmer's sanatorium was largely due to the greatest layman of fifty years ago, namely, Alexander von Humboldt. The layman has had his hand in this crusade against tuberculosis from the beginning, his aid is now recognized to be definitely necessary, it ought not be difficult to obtain.

The Germans believe the purpose of the sanatorium to be three fold: (1) The cure of the patient. (2) The education of the patient in the way of prevention in order to avoid further contagion. (3) The prevention of further contagion on the part of the patient for the time he is in the sanitorium.

The German sanatoria have been built regardless of cost and are magnificiently endowed.

England possesses the next largest number of sanatoria and these are surpassed in magnificence only by those in Germany itself. Like in Germany no money has been spared on the building of English sanatoria, but there the funds have stopped, and there is not a sanatorium on the island that does not show a woeful lack of means for maintenance.

On account of the lack of maintenance English sanatoria are very much hampered in their work. Whatever maintenance they have is kept up by means of subscribers. Depending on the amount of the subscription each subscriber has a right to send one or several cases a year to the sanatorium. The sanatoria are, therefore, practically obliged to take cases even when they are unsuitable. Moreover the subscriber demands admission of his full quota of cases yearly, thereby making the stay of the individual patient short. A common stay is six weeks, and it is uncommon to keep a patient more than three months.

This method of subscription and its *quid pro quo* seems to be pretty thoroughly rooted in England. We all remember in our novels of English life how the landed proprietor of the village, if he built a church, insisted that his family should always retain the right to name the rector.

On account of the unsuitableness of the cases and the shortness of their stay results in the individual cases are not very good. Moreover, the length of time the patient is kept under

control, thereby preventing further infection in the home, is insignificant. Consequently in England the purpose of the sanatorium is considered to be merely educational. The other factors, even the cure of the individual, are forgotten.

France, with her natural antagonism to Germany, succeeded in bringing arguments against the usefulness of sanatoria until within these last ten years. Among other things the French schools insisted that contagion practically always took place about the family hearth in childhood, and when the disease broke out in the adult the patient's resistance was exhausted and the likelihood of cure small. Moreover, by this time he had done practically all the damage in the way of contagion that was worth while considering. The French, therefore, directed all their efforts to the prevention of tuberculosis in the child and to the treatment of the child. I think it is safe to say that they have more sanatoria for children throughout France than in all other countries combined. Their Marine Sanatoria for the cure of tuberculosis in children are the best known in the world.

While, therefore, antagonizing Germany, they developed a new and important phase of the crusade against tuberculosis, namely, the care of the children, and by coming eventually around to sanatoria for adults they furnished the best proof of their usefulness and importance.

On account of our geographical position and our mental attitude towards the rest of the world, the United States stands in an especially favorable position for the development of new ideas. We are reasonably quick at taking up new ideas and taking them up without prejudice. It is not strange, therefore, that the sanatorium in the United States developed along more rational lines and that as a consequence the results accomplished are the best in the world. We consider the purpose of the sanatorium two fold, namely, 1st, the cure of the patient; 2nd, the education of the patient and his friends.

The objection to the public charity sanatoria in Germany is their extreme elaborateness and the lack of enthusiasm of the men usually in charge of them. In the United States we have

not yet gotten beyond the stage where each sanatorium still remains under the control of the enthusiasm that built it. On account of the number of sanatoria in Europe compared with the United States they have better control of the general tuberculosis situation, but I believe are behind us in individual results.

The objection to the private sanatoria in Germany is that they have never gotten away from the ideas of their original founder, except that they have learned to cater more and more to the personal feeling and prejudices of their private patients whom they try to hold apparently for mercenary reasons.

The private sanatoria that I visited in Germany were Brehmer's and Rompler's at Goerbersdorf, Hohenhonnef, Falkenstein and Rupertshain. Brehmer's ideas and his energy in pursuing them deserve to put Brehmer in the position he occupies in connection with tuberculosis work.

Brehmer's idea was that fresh air was the principal element in the cure and that exercise was a powerful adjunct. It was the dictum of the century before when Sydenham insisted that the outside of a horse was good for the inside of a man. From the time of entrance to the sanatorium, Brehmer put his patients on mountain climbing. The grounds of Brehmer's sanatorium consist of a most beautiful park on a rather steep mountain side, traversed by walks among trees and rocks, here cut through a small tunnel, there beautified by a fountain surrounded by nymphs, the whole charming as enthusiasm could make it. Despite the progress in the treatment of tuberculosis Brehmer's ideas continue to be carried out most religiously. Patients are still put on exercise from the moment of entrance practically regardless of the disease condition present.

The next step in the treatment of tuberculosis after fresh air was introduced by Detweiler, who realized that exercise instead of being an adjunct was in many cases harmful. The indications for and against exercise not being properly understood, Detweiler put all patients on rest and kept them on rest.

Exactly across the street from Brehmer's Sanatorium is a sanatorium founded by Rompler, a follower of Detweiler,

Rompler, too, is dead, but Rompler's ideas still hold sway and in Rompler's Sanatorium, though the patients may stay for a year, they practically never get off their steamer chairs. The grounds around Rompler's Sanatorium are quite as beautiful and quite as suitable to exercise as those about Brehmer's, though they are never used.

It is absolutely humerous to an American, with his ideas of properly regulated rest and properly regulated exercise, to find two sanatoria of such repute and in such close proximity continuing to be so opposite in their ideas. I may add that in no sanatorium that I visited was there any serious attempt at enforcing exercise except in Brehmer's, where it was carried to excess. Everywhere rest was insisted on absolutely.

Moreover, though the idea as to the necessity for unlimited fresh air still remains, the private sanatoria in Germany presented the greatest inducements to remain in-doors. In Falkenstein, in Rompler's and in Brehmer's they had the most beautiful reception-rooms, reading-rooms, libraries, closed winter gardens, etc., in each of which a certain number of patients could be constantly found.

In the private sanatoria are seen no arrangements for sleeping out-of-doors, on balconies or the like, and whether the windows are left open at night or not depends to a considerable extent on the whim of the patient. In the charity sanatoria throughout Europe arrangements are most complete for sleeping on balconies or sleeping in very open wards, but in the private sanatoria, though fresh air is insisted on theoretically, it does not seem to be urged practically.

The private sanatoria throughout Germany are handsome, massive stone or brick buildings, built like the cathedrals of Europe to last forever, with landscape gardening about them that any park in the world might envy. They do not, however, begin to compete with the public charity or semi-charity institutions.

To an American the elaborateness and completeness of the charity sanatoria throughout England is astonishing. They are built like the modern European hospital, with all conveniences

and everything in the way of equipment that can be desired or imagined. Some of the older sanatoria in England, like at Bournemouth and Ventnor, on the Isle of Wight, are just handsome old sanatoria, but the recently built sanatoria in England are models of architecture.

The sanatoria at Northwood, Frimley, and Pinewood are splendid examples of this recent style, though the new King's Sanatorium at Midhurst will easily surpass them all. The King's Sanatorium has now been building four years, and will be building one year more before ready for the reception of a single patient. It will cost when finished $1,000,000. Despite the amount of money that is being put into the King's, Northwood, Frimley and Pinewood, which are not far from it, have only one-half their quota of patients. Northwood has accommodation for 120 and has about 68, with Frimley and Pinewood in the same plight. The reason for this is not that they have not sufficient patients to fill these sanatoria, but they have not sufficient maintenance to run them. Looking at them one cannot help comparing the American and the English way of building sanatoria.

Saranac Lake was begun by one patient in a shack, the buildings increasing as patients and money increased. White Haven Sanatorium was begun with three or four patients in a barn, and has gradually grown till it accommodates 188, and practically always has a waiting list. In the case of the King's a million dollars is standing idle while the sanatorium is being built, and during the same period no patients are being treated. We find it sufficiently difficult in this country to get maintenance for our hospitals, yet we never dream of building new parts until the old parts are over-crowded. It is rare, therefore, in America to find empty wards. Throughout England it is the common finding. There is scarcely a hospital in London (none that I personally know of) with its full quota of patients. In Brompton and the City of London Hospital, etc., whole wards are vacant.

In the United States we bring our donors in and show them wards over-crowded to the last degree as an inducement for

further donations. In England they use just the opposite argument, namely, an empty ward completely equipped crying out as it were for patients to fill it.

Throughout England they insist on fresh air to a greater extent than we do in this country, possibly on account of all the vacant space they have. In the charity sanatoria it is common to find the largest wards containing only three and four beds. In the public sanatoria in Germany the wards are a little more crowded, though even there they allow a little more space than we usually do in the United States.

In the public sanatoria in England they endeavor to make the patient do a certain amount of work, especially light gardening, etc., but from my talks with the residents I was inclined to believe this work was more in name than actuality.

Except in Brehmer's the theoretical ideas in regard to work are about the same all over Europe, namely, rest while there is elevation of the temperature or of the pulse and graduated exercise afterwards.

In many of the sanatoria elaborate douche rooms are found. This is especially true of the sanatoria in Germany, all of which, whether private or public, are furnished with douche rooms.

The douche rooms at Falkenstein, at Hohenhonnef and Rompler's fell into disuse years ago, though the douche room at Brehmer's is still in action. The present head of the sanatorium, Dr. Hahn, took particular pains to show me the douche system there and it is worth the mention. The douche room is a common room in the basement with an extremely strong douche falling from a distance of about 12 feet above the patient's head. The physician sat in an adjoining room absolutely separate and unconnected with the douche room, and with the patient's chart before him regulated the strength and duration of the douche.

Despite the fact that the majority of the private sanatoria in Germany have given up the douches, the recent public sanatoria have installed the most elaborate douche rooms that I have

ever seen. The story of these douche rooms is usually similar to that at Belzig.

Belzig is an elaborate half-charity sanatorium about fourteen miles from Berlin, where they charge about $5 a week. It has three departments, one for males, one for females, and one for children. The two former were opened about six years ago, the last about a year ago. Each of the three departments contains its own elaborate marble tiled douche room, magnificiently equipped with every kind of douche known to modern medicine. Everything about the room is beautifully nickel-plated, and one could only imagine it a room in a very luxurious and well-patronized Turkish bath. I asked the resident how much use was made of these rooms, and he said, though he had been there three years he had never seen them used once. In other words, despite the fact that the first two rooms had never been used, they had recently built the same sort of a douche room in the new children's department.

True, in Germany they possess the ideal way of supporting public sanatoria, namely, through the insurance companies and krankenkasse. These insurance companies take in all the people in the state, especially the working people. Every working man and every working woman must be insured, not only against death, but also against disability from sickness or other cause, the employer paying the insurance. When a person falls ill, therefore, the insurance company stands behind to support him. Moreover, many of these public sanatoria have been built entirely or in part by the insurance companies and money was not spared in the building or equipment. This is true of the sanatorium at Beelitz.

The sanatorium at Beelitz is so complete that it is doubtful if any sanatorium will ever be built to surpass it. It has 600 beds, 300 for tuberculosis and 300 for general constitutional diseases, like chronic rheumatism, nervous diseases, etc. The two departments are quite widely separated from one another, and the males and females are also separated in each department.

The absolute completeness of everything at Beelitz is

shown by their elaborate wash rooms. There is a wash room at both ends of each floor. These rooms are handsomely tiled and contain most improved modern marble wash-basins with all their appurtenances. In addition there are a dozen of places (as many as there are wash-basins) in the middle of the room for washing the teeth. These places are separated from one another by zinc-enamelled partitions and contain a self-washing porcelain basin, somewhat similar to our dentist's basin, with a spigot eighteen inches above. The arrangement is ideal, though undoubtedly very expensive. Our dentist's basin costs about $40, it is impossible to imagine what all their elaborate system would come to.

Each of the four departments of Beelitz has its own elaborate douche room, more elaborate and more beautifully equipped, and according to the statement of the resident, as rarely used as those at Belzig. In other words, because Brehmer advocated douches forty years ago, they are still installing douche rooms even where they do not believe in them.

The details of the equipment of Beelitz that are out of the common would necessitate more time than can be devoted to them in one evening. Not a few of these elaborate details are superfluous, yet there is an excuse for Beelitz which does not exist for the elaborate sanatoria in other countries, especially England. In the first place all the public sanatoria in Germany are magnificiently maintained, so that there is no feeling that more money should have been put into maintenance; secondly, Beelitz itself was built by the People's Insurance Company (the Landesversicherung), which found itself in the position where a certain amount of money had to be gotten rid of or it would probably go elsewhere.

The Berlin branch of the Landesversicherung had a surplus of something over thrirteen million marks when the idea arose that sanatoria should be built by the insurance-companies.

Since practically every city and state was to have its own sanatorium, the Berlin branch feared that unless all this money was used some of it would go to other places, consequently instead of seeing for how little they could build a sanatorium,

they were obliged to try to get rid of the thirteen million marks, or something over three million dollars. They have put into Beelitz Sanatorium this whole sum.

In all the sanatoria of Europe they insist on good nourishment, though the details of the nourishment differ somewhat. In most places they simply supply six meals a day, three substantial ones, and three lighter ones, the latter usually composed of milk and raw eggs.

There is practically no insistance on altitude or climate. The recent sanatoria over the continent are at all degrees of elevation, and the very handsomest and most elaborate are not elevated at all, at least not more than will give them a free sweep of country, more on account of the view than any other reason.

Sea coast appears to make no difference in their minds. The older English sanatoria, like Ventnor and Bournemouth, are on the sea coast, the more recent ones in the country near the large cities.

In France, where the adult sanatoria are all recent, the great majority are on the sea-coast. In Germany they have taken no pains but to put them near the large cities; the handsomest ones that I saw, namely, Buch, Belzig, and Beelitz being built on the level without view of any kind (except their own landscape gardening) just outside of Berlin.

I found no special methods of treatment. As in this country, in some sanatoria they use tuberculin freely, in others not at all. Many of the sanatoria show very handsome and splendidly equipped inhalation rooms. On inquiry in the private sanatoria I found that creosote was the most common medicament inhaled. I asked if they thought they derived any benefit from it, and they answered that they did not, except whatever mental impression it had on the patient. In the public sanatoria, like Beelitz, these inhalation rooms are not used at all.

Everywhere throughout Europe the house sputum cup was of China, shaped like a shaving mug, with a removable depressed cuspidor top, and the outside cup a Detweiler blue-glass pocket cup, open at one end by a spring top, and at the other end by a screw top. The germicide usually used was lysol;

in one or two places they still used carbolic acid, and in one, Bournemouth, they were still using bichloride of mercury. Only two claimed to have made a study of the best germicide for sputum, namely, Ventnor and Hohenhonnef, in both these places they were using caustic potash. I mention this with a certain amount of satisfaction, since at the Phipps Institute in Philadelphia we have always used caustic potash in the form of lye. I would like to add also that I never before came in close contact with the Detweiler pocket sputum cup, and I was not impressed by it. Even with the utmost care the top and bottom loosen in a short time, allowing the suptum to continually contaminate the pocket, and, therefore, also the hands.

Hospitals for advanced cases serve the purpose of the prevention of tuberculosis by removing the case in its most contagious period, and so preventing it acting as a further focus of contagion in the home. The cases ordinarily seen in these hospitals are from among the poor. Such cases may live in a helpless condition six months or a year, or even longer. During this period the tubercle bacilli appear more virulent and the wage-earner or house-keeper is not only taken from the family, but extra work is thrown on the others by the nursing and care of the invalid. Moreover, among the poor it is not uncommon to find a dying case sleeping in the dining room or the living room in order that unnecessary steps may be saved the attendant.

The usefulness of hospitals for advanced cases is, therefore, evident. Special hospitals for advanced cases are found in all the countries of Europe, but the best known are in England. Among those I might mention the Royal Hospital for Diseases of the Chest, founded in 1814, Brompton Hospital, founded in 1841, the City of London Hospital, founded in 1848, North London Hospital, etc.

It is a remarkable fact that London, the largest and one of the most crowded cities in the world, has the lowest death rate from tuberculosis, and it appears to me that this can be accounted for only by the fact that London has had for so many years hospitals for advanced cases.

There is another very important purpose served by the hospitals for advanced cases, namely, the better instruction of physicians by means of the autopsies. Brompton Hospital, for instance, has 190 autopsies a year and the others in London a corresponding number. In some ways the physician, especially the conservative physician, is lagging behind the layman in the crusade against tuberculosis. The autopsy table of the hospital for advanced cases is, therefore, an urgent need.

The only special hospital for advanced cases of tuberculosis that I saw in Berlin was the Invalidenheim. This is as yet only an experiment, accommodating a small number of cases, but the need for such hospitals is recognized and they expect to proceed further with them. The general hospitals, however, of Berlin and Paris have special wards for consumptives, thereby deriving the benefit of the special hospital. In this country we have driven the advanced consumptive out of the general hospital and, except in New York and Philadelphia, given him nothing in return.

The most modern machine in the fight against tuberculosis, and one that stands in the foremost rank on account of its power of controlling the tuberculosis situation, is the tuberculosis dispensary. The dispensary of the past saw and treated its case and thought no more about it till it returned; the modern tuberculosis dispensary follows the case to its home and endeavors to control the situation throughout the household.

As Calmette says: "The physician in the tuberculosis dispensary must act very differently to the physician in an ordinary dispensary. In the ordinary dispensary the physician examines the patient and gives him a prescription; he pays little or no attention to the lodgings, resources, the best mode of assistance or the environment of the patient. Such an attitude was all right fifty years ago, when the power of resistance and the care of the patient were not well understood, when it was not known that further spread of the disease could be accomplished, when disease was thought a dispensation of Providence and could not be prevented by human means; but with the progress of science, with the knowledge of the cause of diseases and how to

prevent them, the duty of the physician has been very distinctly broadened. He must not only cure the disease in the patient, but he must prevent its extension further. He must not only treat the patient, but he must coöperate actively with public charity, he must teach families how to live, advise mothers on the proper raising of their children, decide on the salubrity of lodgings, etc., so that taking it all in all his role as educator becomes more important than that of examining physician. In ancient mythology Apollo was regarded as the god of medicine and as the announcer of death, the dispensary of to-day would make him the preventor of disease.

There are two names especially notable in the foundation of the tuberculosis dispensary, namely, Phillips of Edinburgh, and Calmette of Lille, in France. The tuberculosis despensary at Lille, or as it is called by Calmette, the Preventorium, was founded in 1901. According to Calmette's own account the preventorium is not merely to diagnose the case and distribute medicine to the poor, but to investigate and draw under control cases affected with tuberculosis; to give these cases sufficiently often or over a sufficiently long time whatever care clothes, bedding, spit cups, and germicides; to make their lodgings hygenic; to insist on frequent cleansing and disinfecthey need; to properly advise them and their family; to give them, when they are obliged to stop work, proper nourishment, tion; to procure for them when necessary a more hygenic lodging; to gratuitously wash their linen in order to avoid contagion in their family and elsewhere; to see that private benefaction is properly expended and to obtain succor for the patient in every way.

In the preventorium at Lille when the patient comes in he is sent to a bath room, and while he or she is taking a bath the clothing is disinfected. The patient then comes to the physician for examination. The examination is very complete, both as regards the condition of the patient and the details of his occupation, and general environment. If the patient has tuberculosis or the disease is suspected, he is given directions how to live in order to recover and in order to prevent infecting other

people. He is also given a pocket spit cup, a house spit cup and a liter of 2% solution of lysol, with very definite instructions how to use it. A day or two later a nurse is sent to the house to get in touch with the rest of the family, explain to them how the patient ought to live in order to get well, and how they ought to live in order to prevent infection.

If the apartments are not suitable she advises change; if the patient is not in a position to obtain sufficient nourishment she reports it and the dispensary helps him out. The dispensary supplies milk, eggs, meat, coal and sometimes lodgings. In addition it takes care of all the patient's laundry, in order to make sure that it is frequently washed and to avoid the possibility of infecting the laundress. It is considered that no matter how careful the patient is it is practically impossible to avoid contamination of his clothes, thus leaving him a menace to himself and others. Printed pamphlets are also given to the patient, insisting among other things on moist, not dry, sweeping.

Calmette says: "Such a preventorium should be installed in one of the popular quarters of the town. It is in no way a menace to the neighborhood, in fact it is much less dangerous than the ordinary dispensary or charity organization quarters, where diseases of all kinds are seen and where sufficiently vigorous measures are lacking to avoid dissemination of germs of all kinds. Such a preventorium can be created and supported by private benefaction, by beneficial societies, by charitable societies, or by cities themselves."

Calmette's statistics on the general cost of such a dispensary is about 30 cents per day per patient. In 1904 287 families were thus assisted at a cost of $5,400.

Throughout Paris they have opened up three or four dispensaries on the order of the one at Lille. I personally visited only one of them, namely, Beaujon Dispensary. This imitates Lille very closely, and probably the only thing worthy of particular mention about it is the fact that its expenses are entirely borne by one enthusiastic young woman of twenty-three, who, though possessing no means herself, collects the money for this dispensary yearly. Practically the only support given

in the Beaujon Dispensary, at present, is in the form of meat, and since ordinary meats are quite expensive in Paris, patients are supplied when necessary with 100 g. of horse meat daily. As at Lille, however, the physician follows the patient into the home and insists on proper discipline and proper precautionary measures.

Though practically founded in France, the tuberculosis dispensary appears to have had its greatest development in Germany. Berlin has three or four of these preventoriums which prepossess one as most thorough in their work. In Germany they are called Fursorgestelle.

In my opinion, Berlin has the best control of the tuberculosis situation of any city in the world. It has three very handsome and very large sanatoria, four tuberculosis dispensaries, three park convalescent camps and various societies which aid in the prevention of tuberculosis.

Considerable of this magnificent control is due to Prof. Pannwitz. The head of the dispensary system in Berlin is Dr. Puetter, who was brought to Berlin from Halle for this purpose, on account of his success in Halle. The park convalescent camps are the result of the earnest work of Dr. Becher, encouraged and assisted by Prof. Pannwitz.

I was especially prepossessed by the general economy of the physician's time in the Berlin Fursorgestelle. The system was about as follows: There were three connecting rooms; in the first the patient waited his turn, in the second were two or three nurses who took the histories, and in the third the physician made the examination. The nurses took the complete history of the patient, not only relative to his occupation and home surroundings, but even in relation to his previous diseases, his present symptoms, etc.

In both France and Germany the history sheets are models that might be imitated everywhere. The German one appears to me specially complete. The Phipps Institute Dispensary of Philadelphia has taken the liberty of extracting things from both.

After the nurse has gotten the complete history, the patient

again waits his turn and goes to the doctor for examination. The examination was more or less perfunctory and not very detailed. In other words, the Fursorgestelle caters more to the treatment of the patient and the further prevention of the disease than to the study of the individual case. The physician decided only that the patient had tuberculosis, the general stage of advance and the probable prognosis. After the examination the patient was sent home without treatment, and a day or two later the nurse visited the house and investigated the home conditions, as to destitution, surroundings, etc. If the patient were suitable from the standpoint of destitution, the patient and his whole family returned to the dispensary on another day. Each member of the family or of the household was examined and all instructed how to take care of themselves, either to cure or prevent the condition. If the house or apartments in which they lived were unsuitable, they were not only encouraged to seek other quarters, but it was insisted on. A member of the family was at once sent out to seek these new quarters, and when found, the nurse decided on their suitability. If these quarters were more expensive than the old ones, and the patient could not afford to pay the extra price, the dispensary paid the difference between the old and new lodgings.

If the patient or patients were extremely early cases, and could continue their occupation while recovering, they were allowed to do so. If the family income was insufficient to procure proper nourishment, this was supplied by the dispensary. If the case was more advanced, but still curable, it was sent to a sanatorium. If the patient was quite advanced, but could be handled at home, he was encouraged to go daily to a day camp, and particular attention in the way of prevention was paid to the rest of the family. If the patient was very advanced, and the surrounding circumstances were unfavorable to his remaining at home, he was sent to the hospital for advanced cases.

The control of the tuberculosis situation in Berlin is complete, on account of all the different institutions working in harmony. It thus happened that if a patient could not be con-

trolled in one way, he could be controlled in another. Each part of this magnificent system was controlled by its special men, yet all parts worked together so as to control the situation.

In these dispensaries the nurses did very good and very intelligent work. I sat for hours in these dispensaries listening to different nurses extracting histories from patients, and it seemed to me they did it as well as any physician. I am remarking this side of it particularly, on account of the general economy of this method and the large number of cases that the physician is thereby enabled to see.

The nurse visited the home of the patient once a week, or once in two weeks, in order to see that the instructions were being properly carried out. The patient visits the dispensary, if a curable case, about once a month, and if incurable, even less frequently.

Another very good thing which originated in Berlin is the Park Convalescent Camp (Walderhollungstatte). I visited these in company with their founder, Dr. Becher. The principal one is at the edge of the Grunewald, or Green Forest, eight miles from the center of the city. It consists of a rather pretty Queen Anne cottage, one story high, with a little distance from it a long, rough kiosk, the whole surrounded by about an acre of ground enclosed by a wire fence. The cottage contains quite a large kitchen, from which can be fed 200 people at a time. The dining room is furnished with rather rough benches and tables, and seats about sixty.

This camp is intended for patients too advanced for sanatorium treatment, but capable of caring for themselves at home, or for patients who are forced to stay at home from work on account of temporary indisposition.

The patient comes here early in the morning, between eight and ten o'clock, and remains till between four and six o'clock in the afternoon. The kiosk is furnished with steamer chairs, giving the patient the opportunity to sit out all day in company with others. The camp supplies the mid-day meal at the nominal sum of seven cents, and gives the patient, free of charge, a pint of milk at ten o'clock, and at three in the afternoon. This

scheme works very much better in Germany than in the United States. In the first place the meals and the milk are supplied by the insurance companies; in the second place the railroads give the patients special rates, for instance, the ordinary charge to Grunewald by train is eight cents; railroad working men and patients for the camp pay only two cents. Moreover, the street cars and omnibuses give special rates at seventy-five cents a month, for an unlimited number of rides in both directions.

These camps are undoubtedly good for several reasons: (1) They give the patient what he needs, namely, plenty of fresh air, and they encourage him to take it by the companionship of those about him. (2) They give him the nourishment necessary and teach him what nourishment he should take. (3) They keep him away from his own apartments and, therefore, his family for a considerable part of the twenty-four hours. (4) They encourage methods of prevention by insisting on the practice of these methods at the camp.

These park convalescent camps are managed by a nurse and two or three kitchen women. The camp supplies the necessary blankets and the general comforts. With the city contributing the ground near one of its parks, such a camp can be installed for about $1,500 to $2,000 initial expense, and kept up for probably $50 per month, provided the meals are paid for. Any physician in town is entitled to send his patients to these camps. The patient is not treated at the camp, and so remains entirely under the control of his home physician. The patients have the privilege of resting all day or walking about through the woods, depending on the directions of their physician.

My principal object in visiting Berlin was to study the convalescent camp, with the idea of starting one in Philadelphia. I was not so much prepossessed as I expected to be, yet I thought them a very good adjunct in the crusade. Anything tending to educate the patient, or remind him of the care he should constantly take, cannot help but be serviceable.

From experience I have learned how soon patients forget

their teaching, even when it has been instilled by months of a routine in a sanatorium. One day a month spent in a convalescent camp would, I believe, keep patients on the *qui vive,* consequently the usefulness of the camps is apparent.

The fifth thing in the crusade against tuberculosis is the tuberculosis society, composed of physicians and lay people, the principal object of which is the education of the people in the prevention of the disease. The oldest society in the world, with this main object, is the Pennsylvania Society for the Prevention of Tuberculosis, founded in 1892. Though the United States posseses the oldest society of this kind in the world, the Europeans have developed it in a way that might easily make us blush. In New York and Chicago the Anti-Tuberculosis Society is developing along the lines popularized in Europe, but even they are not yet far advanced. In Europe they have combined with the Anti-Tuberculosis Society every other society, no matter what the general object which might in any way aid the crusade against tuberculosis. Boards of health, charity organization societies, children's aid societies, day nurseries, labor unions, workingmen's beneficial associations, civic betterment societies, tenement house societies, city park societies, anti-dust societies, temperance or total abstinance societies, are all brought in to aid the cause.

Other things that were discussed by the Congress were isolation of prisoners with tuberculosis, most of which work has been done in New York; isolation of the insane in insane asylums, which was first done in a definite, permanent way in the city of Wilmington.

What was learned from the Congress and the investigation of the tuberculosis work in Europe?

1st. That although the sanatoria in the United States are probably accomplishing better results in individual cases, we have not a sufficient number of sanatoria. Germany, with only two-thirds our population, not one-tenth our area, and not one-twentieth our wealth, has more sanatoria and is expending three times the amount of money on them.

2nd. We are not using all the means that might be employed

to build and maintain sanatoria, like insurance companies, beneficial societies, etc.

3rd. We are lacking in hospitals for advanced cases, and until we get them, wards in general hospitals should be set aside for the care of tuberculosis. Such wards in addition to caring for the consumptive will help in the education of the general physician, the residents, the nurses and the patients.

4th. The tuberculosis dispensary as managed in France or in Germany is the most important element in the crusade against tuberculosis, and we are woefully lacking in them. A city the size of Philadelphia should have at least half a dozen, and it has two; Wilkes-Barre should have two, and it has none.

Wilkes-Barre needs a tuberculosis dispensary, a dispensary that shall not only treat cases, but follow these cases into the home and prevent them from infecting other people, thereby controlling the tuberculosis situation. This dispensary might be controlled by the city (as in New York City), or by the county, or by a combination of beneficial societies, or by the benefaction of the well-to-do, if not through pure beneficence, then for the sake of self-defence and in defence of their children.

INTUSSUSCEPTION.

BY DR. W. L. ESTES, SOUTH BETHLEHEM, PA.
READ SEPTEMBER 2, 1906.

Modern surgical writings, it seems to me, have given scant attention to a condition which, on account of its frequency and extreme gravity, should be marked as one of the most alarming surgical conditions of childhood. And, because it occurs very suddenly, and requires rapid and efficient surgical treatment, for the general practitioner it is a subject pregnant with vital interest, and for all of us it is a matter of great importance. Having these thoughts in mind, I have selected for this paper the subject of Intestinal Intussusception. I am led to do this because some recent cases have brought the subject very pertinently to my attention, and especially because this condition in children is quite as frequent, and equally as disastrous, if not speedily recognized and relieved, as appendiictis is.

A true intussusception is, as Treves says, "a prolapse or turning of one part of the wall of the bowel into the lumen of an immediately adjoining part." There is also a sort of false intussusception which occasionally occurs in the very act of dying. This is a short invagination, easily reduced; it may be multiple; and it is in a retrograde direction—that is to say, the invagination is from below upward instead of, as is always the case in true intussusception, from above downward.

The pathological condition is practically a slipping of a continuous tube within its own lumen. This produces a double acute flexion or, more properly, an acute flexion at two places. Each external and internal coat is in juxtaposition with its fellow coat—that is, the peritoneal coats are together, and the mucous are likewise in touch with one another. "In all forms of intussusception, except the ileo-colic, the invagination increases at the expense of the external layer only. The apex of the intussusception always remains the same." (Treves.) It is well to bear this fact carefully in mind, as it serves to sug-

gest some of the later pathologic changes, and also to direct one's efforts at reducing the condition. Peritoneal surfaces adhere quickly when closely applied and are kept in place under moderate pressure. Mucous membrane tends to ulcerate when it is bent at an acute angle and is subjected to tremendous pressure and friction. The agglutination of the outer coats occurs scarcely quicker than ulceration of the mucous lining, and gradual escape of the intestinal bacilli to the other walls of the intussusceptum; and as the bloodvessels, narrowed both by pressure and position, become clogged with micro-organisms, thrombi form, and death of the intussusceptum follows rapidly. The double danger: first, impracticability of reduction on account of agglutination of the peritoneal coat, and second, ulceration, perforation and sloughing of the invagination, may develop rapidly. The condition is one calling for prompt surgical relief.

Varieties of Intussusception.—Four varieties of intussusception are commonly recognized, namely, (1) Ileo-cecal, (2) Enteric, (3) Colic, (4) Ileo-colic. Recently the possibility of a fifth variety has also been mentioned, namely, (5) Appendico-cecal. Kelly, in his recent work on appendicitis, mentions three forms of appendico-cecal intussusception: (a) appendix carried along with the invaginated cecum; (b) appendix itself forms the apex of the intussusceptum; (c) inversion of the appendix itself, partial or complete, with or without inversion of the ceceum. These appendico-cecal varieties are very rare.

The ileo-cecal (invagination of the ileum into the cecum) is the commonest form of intussusception. Treves says that out of 100 cases, 44 will be ileo-cecal. The enteric variety (invagination of a section of the small intestine into its own lumen) is the next most frequent; 30 cases out of every 100 belong to this class. The colic (invagination of a segment of the colon into its own lumen) is third; numbering 18 cases out of every 100.

The ileo-colic form includes rare cases of invagination of the ileum into the cecum, in which, with the ileum as the apex, there is also a folding-in of the cecum with the ileum into the

colon. These cases furnish the condition of chronic intussusception, which may be very extensive. The third case which I shall here report was one of this kind. Mikulicz published a similar case. The invagination may extend so far that it can be felt by a finger passed into the rectum. Thus, in my case, as well as in that of Mikulicz, the invagination was so extensive that the intussusception could easily be felt in the rectum. These cases are found in the proportion of 8 in every 100.

Frequency.—In regard to the absolute frequency of intussusception, the *American Text-Book of Surgery* states: "It is estimated that 30 per cent. of all forms of intestinal obstruction, exclusive of hernia and congenital malformation, are cases of invagination." This is probably very near the truth.

Etiology.—Predisposing causes: (1) Age. It is universally known that children are especially liable to intussusception. There are many theories to account for this, but I think they may be all summed up in the statement that invagination of the bowels is apt to occur in childhood because during the period of rapid growth the intestinal walls are thinner and laxer, and less well supported by the mesenteries than they are in adult life. It is said that 72 per cent. of the cases are males, and 28 per cent. females. Heusner is quoted as saying (*American Text-Book of Surgery*) that three-fourths of all cases of intestinal obstruction in children are intussusceptions. Dr. A. Jacobi says that 25 per cent. of all the cases of invagination or intussusception occur in the first half year of life (two-thirds of these between the fourth and sixth months), and 53 per cent. of the cases occur before the end of the first year of life. The *American Text-Book of Surgery* states that in more than 50 per cent. of cases the patients are under 10 years of age. I think that the latter statement is misleading, and may direct young practitioners to the formation of wrong conclusions. It would be better to say that more than 50 per cent. of the patients are under six years of age. In diagnosing these cases the age of the patient must sometimes aid us in coming to a correct conclusion.

Other predisposing causes are: (2) Intestinal indigestion.

Bottle-fed children are therefore more liable than breast-fed infants. (3) Improper feeding. (4) Especially long mesentery. (5) Malformations.

Determining Causes: (1) Constipation. (2) Subacute enteritis. (3) Small foreign bodies in the intestines. (4) Bad positions of the child, as for instance, carrying it about a great deal in the arms, and setting it up in constrained and, for its age, unnatural positions.

Symptoms.—Manifestations of acute intussusception come on very suddenly, and without any premonition. They are: (1) Sudden spasmodic pain, occasionally accompanied or followed by symptoms of collapse or great weakness. (2) Usually at first there is diarrhoea or frequent passages from the bowels. At first the evacuations are feculent, then loose and inclined to be watery, then mucoid, and frequently tinged with blood. Bloody, glairy, mucoid passages following sudden, violent, crampy pains in the abdomen of a young male child, are very significant—almost pathognomonic. (3) Tenesmus is persistent and very urgent. Sometimes prolapse of the rectum occurs. (4) Absence of fever in the early stages. (5) Distended abdomen, with no especially sensitive areas in the early stages, and in the intervals of pain no spasm of the abdominal muscles. (6) A very characteristic symptom is the intermittency of the pains, etc., after the first hour. There are intervals in which the child appears to be almost, or quite well. It will return to its play, and ask for something to eat; but in a short time it will again have a paroxysm of pain and tenesmus; and if it has eaten anything, it will probably vomit. (7) Sometimes a tumor may be felt; but in the earlier stages this is not by any means a constant, or even frequent sign. Later it may usually be felt. (8) Later symptoms are those of intestinal obstruction, viz., persistent vomiting; abdominal distension, constipation, abdominal pains, spasm of the abdominal muscles, insatiable thirst, weak, rapid pulse, pale pinched face, emaciation, and usually some fever. (9) Leucocytosis is usually present after complete stasis of the bowels

occurs; but it is not nearly so marked as in suppurative conditions.

Diagnosis.—Frequently the symptoms are so clear and characteristic that no difficulty is experienced in coming to the proper conclusion in a case. Occasionally the symptoms are less well marked, or perhaps the anxiety of the mother so befogs her perceptive faculties that she fails to notice some important symptom, and her account may mislead the physician if he is called, as it not infrequently happens, on the second or third day of the "attack."

The two conditions which perhaps will most frequently have to be excluded before one feels sure of a diagnosis of intussusception are, volvulus, and appendicitis. The differentiation of volvulus will present special difficulty. If the child be closely observed for a few hours, I think, however, that the bloody mucoid stools and the tenesmus will show conclusively the nature of the disease in a case of intussusception; the absence of these characteristic signs will make the diagnosis uncertain. A tumor may occasionally be felt in both conditions; the tumor of invagination being usually sausage-shaped, larger than that of the valvulus, and apt to be in the right iliac region. It must be remembered, too, that volvulus is very rare in young children. As the treatment is identical, however, and equally urgent in either case, absolute differentiation is not necessary.

Differential diagnosis between appendicitis and intussusception is also not always easy, as my second case reported below will show. Appendicitis is not as common in very young children, as intussusception is, and as a rule its onset is not so violent. The pain becomes progressively worse in appendicitis, and the paroxysms in the earlier stages do not last so long as those of intussusception do. Vomiting usually comes earlier in appendicitis. Fever also usually occurs much earlier, and it is very much higher than in intussusception. General abdominal distension and obstinate constipation likewise come on much earlier in appendicitis. Bloody stools are absent in appendicitis, and the intervals of pain so characteristic of intussusception, do not occur in ap-

pendicitis. The tumor in appendicitis is much more sensitive to the touch, is usually of a different shape, and is much more fixed than that of intussusception. The leucocytosis in appendicitis is very much higher than in intussusception; and septicemic conditions develop much earlier in appendicitis.

Prognosis.—Bayard Holmes says, in his recent work on *Surgery of the Abdomen:* "The prognosis in intussusception in the very young is so unfavorable that it may be declared an absolutely fatal disease." I would not go so far as that; but undoubtedly intussusception should be regarded as the most serious of all abdominal diseases in children. I feel confident that I have seen a few cases recover, if not spontaneously, certainly without operation. These cases are rare, however, and are not mentioned to invalidate nor to lessen the force of the statement of the absolute necessity for early operative intervention in a case not relieved otherwise in a very few hours.

Treatment.—The only sure and safe treatment for an intussusception is an operation. I have relieved a few cases by high injections of water; two cases I have relieved by deep abdominal massage; and I have seen one or two cases relieved spontaneously, after days of suffering, by sloughing of the intussusceptum, and its passage from the bowels. These results, as I have said, are very rare. I believe, however, that if the child is seen very soon after the attack has begun, and an ileo-cecal or colic intussusception is recognized, one should try full, deep enemas (given with the child lying on its abdomen, across the knees of the person giving the enema), combined with massage and gentle manipulation of the tumor. If the form of the intussusception be the enteric variety, the enemas will do no good. Manipulation and massage may possibly relieve the invagination. Nowadays, these efforts at reduction should be continued but a very short time, *not over four hours.* I think that all gases which may be forced into the intestine with sufficient pressure to serve any useful purpose in reducing the invagination are, *on account of this pressure,* dangerous, and should rarely be used. Opium or morphine must frequent-

ly be employed to relieve pain; but they should be used only after one has made up his mind as to the condition, and fully determined on his line of procedure. Else, the early and important symptoms of obstruction may be so masked by the effect of the drug that one may be beguiled into a false feeling of security, and be made to believe that the invagination has been relieved. Morphine undoubtedly assists the enemas and manipulations by its relaxant effect, quiets the child, and procures a little rest after the manipulations, etc., and for this purpose it is most valuable. The special effects of belladonna or atropin, and of eserin salicylate, in causing relaxation of the intestines, I must confess I have been unable to verify. I have very little confidence in them, and certainly would not recommend them even as hopeful adjuvants in the treatment of intussusception.

An operation is demanded in all cases of intussusception which have resisted the preliminary effort of colonic injections and manipulations, and have continued as long as four hours. I must say that four hours is simply an arbitrary time-limit of my own. I have found that non-operative treatment succeeds after two or three efforts, or not at all; and every hour usually adds to the extent of the invagination, for the violent peristalsis is apt to drive more and more of the intestine into the intussuscipiens. The adhesions between the peritoneal coats will have begun, the abrasion of the mucous lining will have occurred, and ulceration will soon follow. The constriction of the intussuscipiens will have caused greater and greater edema in the intussusceptum, and stasis of the blood current of this section will not be long delayed. An operation, if it is to prove a very simple procedure, almost devoid of danger, must be done before serious inflammatory changes have started in the invagination. Every consideration demands, therefore, an early operation. No great changes, as a rule, occur in four hours in these cases; but they are established very soon after this; hence my recommendation not to wait longer than four hours.

Operation.—The surgeon should be prepared, when perform-

ing an operation for intussusception, to meet any of the abdominal operative exigencies. He may have to exsect a portion of a gut, do an anastomosis, or remove sloughing masses of various sizes and extent, and restore continuity to the intestines, or control hemorrhage; and he must do all this expeditiously and carefully, and in a way to prevent infection of the abdominal cavity. Young children do not stand well, long abdominal operations, nor the loss of much blood. Careful asepsis should be observed in everything, and at every point, both in preparing for, and in performing the operation.

I prefer the lateral median incision in ileo-cecal intussusception. I mean by this an incision through the rectus muscle to the right of the median line; but the placing of the abdominal incision is a matter of experience or judgment in each individual case. As soon as the abdomen is opened, if the location of the intussusception has not been determined, the ileo-cecal junction should be first investigated. The majority of the invaginations will be found there. An ileo-cecal or a colic invagination may also be determined by the hand or fingers searching about the cecum or lower colon. If nothing is felt there, a careful investigation of the small intestine in the umbilical region should then be made. Failing to find the intussusception by these explorations, the small intestine must then be carefully withdrawn, coil by coil, from the abdomen, received in warm, moist aseptic towels, and its whole extent inspected. Sometimes reduction is obtained by the manipulation necessary to catch up and bring outside of the abdomon, a coil of intestine; but inspection is important even then to establish the condition of the portion of the gut which was invaginated, to determine whether it has been injured too much to allow it to remain, or not.

When the intussusception is found the next thing is to reduce it as rapidly as possible without further injury to the gut. Treves suggested the method which I have found exceedingly useful and efficient, namely, the "milking method." This means grasping the invaginated portion of the intestine at its upper part, and then systematically and gradually squeeze or compress the swollen area in a manner similar to that

employed in squeezing the udder of a cow in milking it. While this is being done with one hand, the other holds the last part of the gut above the intussusception and very, very gently draws upon it. Traction must be done exceedingly gentle, and with but very little force. Traction alone as a means of reducing the invagination, is inefficient, and may be very harmful. It is surprising with what ease and facility the milking method reduces or expresses the invaginated portion.

In case strong adhesions have formed, and the invagination will not yield, exsection must be employed. One must judge by the individual local conditions whether a complete resection of the whole area involved shall be done, or whether it is best simply to split the intussuscipiens and remove the intussusceptum, and then anastomose, either end-to-end or laterally. If the case is one of long standing and the length of intestine involved is not great, then a complete resection of the area involved is probably best, as the walls of the gut are apt to be diseased and will not bear suturing well. If the invagination is an extensive one, and it is impossible to reduce it at all, it will probably be best to follow Mikulicz' example, and do as he did in a case of very large and extensive ileo-colic intussusception: slit the intussuscipiens and remove the intussusceptum. This may also be done by incising the intussuscipiens below, on a level with the entering angle or apex of the intussusceptum; grasp the apex of the intussusceptum with a pair of strong forceps, and then push it by the aid of the forceps through another slit above, after sewing together its upper connection with the intussuscipiens, then suture the slits in the sides of the intussuscipiens. Or the extraction of the intussusceptum may be done in the opposite direction, namely, from below—this is probably the best way. First suture carefully the entering intussusceptum to the upper rim of the intussuscipiens; then make a lateral slit a little below this point, grasp the invaginated gut with the blades of a rubber-covered compression forceps transversely across just below its entrance, then place another and crushing forceps without rubber a little further below, also transversely across the intussusceptum, cut through

the gut (that is, the intussusceptum), between the forceps; then make a slit a little below the apex of the intussusceptum, in the walls of the healthy gut, and draw out the intussusceptum, by gradual traction from below. The milking method of expressing, and gentle pressure, with the forceps attached above, will materially assist the exit of the intussusceptum. This method follows the course of natural peristalsis, and the extraction of the cut-off fragment of gut is easier. The mesentery must be as carefully sutured, and its blood supply preserved as sedulously as in the cases of ordinary exsection of the intestines.

Chronic Intussusception.—Chronic cases are very difficult to diagnose. Treves says: "Most of the recorded cases were never diagnosed during life or before operation." He also says that these cases are "most common during active, adult life." I doubt this; but I have found them very difficult indeed, to diagnose in the earlier stages. In the chronic cases of very extensive invagination of the ileo-colic kind, which extend into the rectum, when the intussusceptum is hopelessly injured and is sloughing, and one determines on an exsection, after suturing the intussusceptum and the intussuscipiens above, and cutting it across, as indicated in the foregoing paragraph, the sloughing gut may be withdrawn through the rectum and anus, *if it can be reached from the anus.* An assistant should do this while the operator steadies the intestine above and assists the descent by gentle expression or "milking."

As I have said before, the ileo-cecal and the enteric are the acute forms of intussusception, and these require immediate operation, or else death will almost and immediately follow when the four-hour limit has passed without reduction. The colic and ileo-colic varieties are usually much less acute in their manifestation; and while delay is not to be advocated, these cases may go on for some time without causing death; and even after days, and sometimes weeks, an operation may save the life of the patient. These delayed operations nearly always necessitate resection or exclusion of some portion of the intestine.

Many surgeons have warned against the danger of a recurrence of the intussusception after its operative reduction, and several procedures are suggested, to be used when a case is operated upon, in order to prevent this. One of these methods is to shorten the mesentery. This seems to threaten a greater danger than the possibility of a recurrence of the intussusception; for the plaiting or folding in of the mesentery thus recommended may lead to constriction of the bloodvessels, and this, in turn, may cause gangrene of a portion of the intestine and of the folded mesentery. A more surgical procedure would be a shortening and thickening of the intestinal coil at the seat of greatest danger—namely, the lower ileac section This may be done by slitting the intestine longitudinally, and then bringing the two extremities of the incision together and suturing the opening transversely, as in Mikulicz' pyloroplasty. It seems to me, however, that all of these measures are inadequate, if they are necessary, because, when an intussusception occurs, there is probably a laxity of the whole small intestine, and it is quite impracticable to fold up the whole mesentery, or to make a sufficient number of longitudinal slits and suturings to control the whole intestinal tract. It is impossible to keep track of all the cases of intussusception one sees, especially in hospital practice—but I have never known a recurrence in any case. I believe, however, that the operated cases especially, are, to an extent, protected from a recurrence by the thickening and stiffening of the gut which result from the traumatism of the invagination, efforts at reduction, and the handling during operation. I think that any set mechanical procedure for preventing a recurrence of an intussusception is unnecessary; and it may do far more harm than another intussusception.

After-Treatment.—The after-treatment of operated cases is identical with that of any simple abdominal operation. There is usually paralysis of the section of bowel which has been invaginated, for a short time, at least. One must be careful about giving purgatives. The bowels should be opened by enemas. If fecal vomiting has occurred it will be well to wash out

the stomach thoroughly with a weak saline solution. If a pint of the fluid be left in the stomach after careful washing, it will markedly relieve the intolerable thirst that is apt to follow the operation, and also assist in re-establishing the functions of the bowels.

Cases.—The following cases illustrate three types of intussusception, and they are interesting in themselves. I relate them as indications that, first, acute cases of ileo-cecal intussusception may be saved sometimes by a late operation; second, that some cases of intussusception may be mistaken for acute appendicitis; and, third, that invagination of the intestines may be of long standing, and tends always to increase.

Case I. A girl, 2 years old. Was a bottle-fed baby. Had had much trouble from indigestion, had never been very strong or robust; but recently her digestion had been apparently good. and her health had been good. I saw her first at night in consultation with Dr. Hornbeck of Catasauqua. The history was that in the absence of the family physician, three days before, she was suddenly seized by violent abdominal pains, frequent desire to defecate, and much straining and tenesmus. At first the passages were fecal, then they were strings of mucus tinged with blood. She had intervals, apparently, of complete absence of pain, in which she seemed tired, but pretty well. During these intervals she would play with her toys, and ask for something to eat. After three days of treatment by enemas, mild laxatives, and various stomachics, she developed signs of complete obstruction of the bowels. She had obstinate constipation, distended abdomen; frequent vomiting, towards the last of a feculent character; almost persistent pain in the abdomen, rapid, weak pulse; and signs of general and very marked weakness. It was the fourth day when I saw her first. I found a very pale, emaciated, weak, suffering baby; with pulse 130 and temperature 101°. She was vomiting about every half hour. She was exceedingly thirsty. The abdomen was distended, but without any very tender spot; and the muscles seemed equally spasmodic on both sides of the belly. There was general tympany. No distinct tumor could be felt;

but there was a little tenderness and thickening in the right iliac region. On account of the impracticability of properly preparing for the operation at a private house at that time of night, I decided to remain and watch the patient, and postponed the operation until early morning. Accordingly, I telephoned my assistant to prepare everything, and to come early the next morning. By the use of some strychnia and morphia, and small injections of saline solution into the colon, the child's condition was actually a little improved during the night. Her pulse was better, and she looked better.

We operated early in the morning. A median incision was made. As soon as the abdomen was opened I passed my hand into the right iliac region and explored the ileo-cecal region. I at once found the characteristic sausage-shaped tumor at the ileo-cecal valve, denoting an intussusception. I grasped the tumor to steady it while my assistant turned the child, in order to get the coils of the intestine out of the way. I made gentle milking motions, and almost immediately the invagination was reduced. Inspection showed a very much thickened and inflammed section of the ileum about six inches long; the peritoneal coat was very much roughened; and the color of the intestine was somewhat doubtful. I found, however, that the mesentery, except one laceration or erosion at its lower border, was in pretty good condition; and its vessels seemed quite patulous, and not seriously injured. I decided not to exsect the injured gut. The torn border of the mesentery was sutured, the peritoneal coat of the injured area was bathed with a hot saline solution, dried, sprinkled with aristol, and replaced; and the abdomen was rapidly closed. The child made a rapid and uninterrupted recovery, and has been quite well ever since.

This case illustrates the fact that the most common form of intussusception, the ileo-cecal, does not produce complete intestinal obstruction at first, and that the constriction at the ileo-cecal valve is not always sufficient to produce gangrene of the ileum. The cecum itself is so roomy that unless a large coil of the ileum enters, the constriction would be only at the valve, and in the ileum itself where it is folded in. In a few cases

this may be endured for several days, and operation should not be denied even at a late day. One is forced to do a rapid operation, however, and cannot be as careful and thorough as he would be were the condition of the little patient still good.

Case II. A boy, 4 years old. Was brought to St. Luke's Hospital, where the following history was obtained: The child had been perfectly well up to two weeks before admission. He was seized suddenly with violent pain in his right iliac region; he vomited, and had fever. After the initial attack, which lasted, as well as we could find out, only a few hours, he was not confined to bed. In two days he seemed pretty well again, though he still had intermittent attacks of cramp-like pains in his abdomen. He continued in about the same condition for about a week; when he again had violent pains in the abdomen, vomited, and had fever. He also had diarrhoea, and passed a good deal of mucus; but no blood was noted in his stools. The physician who attended him thought the child had appendicitis, and with that diagnosis he sent him to the hospital for operation.

On admission the child was thin, pale, had an anxious expression, and apparently was suffering severely. His pains seemed to be persistent, and not in intermittent paroxysms. His temperature was 99.4°, pulse 100, and respirations 24. Examination showed no marked distension of the abdomen, nor any very tender spot. There was no marked spasms of the muscles. A hard, movable tumor could be felt to the right of, and a little below, the umbilicus. Its longest direction was transverse, and it seemed to reach from the spinal column into the right lumbar region. The tumor felt singularly hard, and was dull on percussion.

I was greatly puzzled as to the nature of the case, and could not account for the hard tumor located as this one was. As the symptoms were not pressing at the time, I decided to postpone operation and keep the child for a while under observation; but to operate as soon as any bad symptom should occur. He was given a succession of enemas. His bowels were reported to have moved fairly well, and he did not vomit at all. He had

occasionally some crampy pains. His pulse rate began to run up without rise of temperature; so I decided to operate two days after he entered the hospital.

The right rectus incision was used. A curious condition was revealed. The tumor seemed almost a completely solid mass, and was found to be an invagination of the ileum into the colon; and such close and strong union had taken place between the intussusceptum and the intussuscipiens that the lumen of both guts were almost solidly occluded. It was astonishing that anything, even gas, could get through such a solid-feeling mass. The colon had taken a curious curve inward and upward, so that the cecum and the ileum were up in the umbilical and lower epigastric region, and the cecum was very strongly adherent to the peritoneum and cellular tissue over the third section of the duodenum. This union was so dense that it seemed quite impracticable to separate the cecum without a tedious dissection, which might involve the duodenum and pancreas. I decided, therefore, to make an anatomosis between the ileum and the transverse colon, thus excluding the cecum and ascending colon from the intestinal circuit. I did this because otherwise it would have been necessary to exsect the cecum and a section of the ileum; this would have required a long time, and, as I have said, would possibly have involved the duodenum and pancreas. The child made a rapid and complete recovery.

This case is very interesting. It exhibits: First, the extraordinary tolerance of a child of an almost impassible condition of his intestinal tract. Second, the fact that very small channels in intestines will serve to pass feces and gas if no serious peritoneal inflammation occurs. Third, that an invagination of the small into the large gut may result in dense union without sloughing of the intussusceptum, and that the swelling of the intussusceptum may not be sufficient to produce complete occlusion. Fourth, that long and continued peristaltic efforts and contractions of the abdominal muscles may force the cecum up to, and inflammatory adhesions may hold it firmly at the ligament of Treitz and upon the duodenum. In this case I

thought at first that it might be an undescended or fetal cecum with a short or undeveloped colon; but it was not so. The colon was of normal length; but was curved upward and inward, and attached as I have indicated.

Case III. A boy, aged 9 years. He had been ailing for about one year. His parents stated that about one year before his admission to the hospital he had some enteric trouble. He was sick for about two weeks, and then seemed to recover entirely. On November 19th, about five months before his admission to the hospital, he was struck on the abdomen by another boy. Two days later he had severe abdominal pains. After this he had, in addition to his spasmodic abdominal pain, frequent bowel movements. He passed a quantity of shreds and bloody mucus. He was confined to bed for eight weeks; and then he was up and about for three weeks, though he still had abdominal pain of an intermittent kind, and his bowels were costive, though not alarmingly so. After this he had again violent attacks of crampy pains in the abdomen, frequent desire to defecate, and intolerable tenesmus. He passed only foul smelling, dark colored fluid, which contained a sediment looking like black sand. I saw him first in consultation about this time—about two months before he came to the hospital, and nearly three months after the beginning of the attack. The boy was thin, but not emaciated; he vomited rarely; his pulse was good, and his temperature varied from 99°-101°. At that time he had spasmodic pains about every half hour, which were not excessively severe, but he had exceedingly trying tenesmus; and he passed frequently a small quantity of extremely offensive fluid. Very careful and prolonged examination of his abdomen failed to reveal any tumor or marked thickening. There was no spasm of the abdominal muscles, and no special tenderness anywhere. Rectal examination was quite negative.

I gave as my opinion at this time that the boy had had an intussusception, and that the invaginated gut had been reduced, or, most likely, had sloughed off. I suggested intestinal antiseptics and small hot saline colonic douches given very care-

fully. The child seemed to improve after this in every way; and he was able to be up and about, though he was always ailing more or less. A few days before his admission to the hospital, he was again seized by violent pains, passed bloody mucus, and numerous stools of very offensive necrotic tissue. He vomited almost persistently, his abdomen became distended, and he fell into a very weak, septisemic condition. He was then sent to the hospital.

He was admitted April 10th, nearly five months after the apparent beginning of his attack. Condition on admission: An emaciated, pale, excessively weak boy. Temperature 100°, pulse 128, and very weak. Distended and very sensitive abdominal walls. A large tumor is felt, reaching almost transversely across the abdomen, from the right iliac, just below the umbilicus, to the left iliac region; and then apparently dipping down into the pelvis. Digital examination of the rectum showed a large mass projecting down as far as the lower part of the middle section of the rectum; and it seemed to block up the whole lumen of the rectum.

Although the condition of the boy was a desperate one his parents begged that an operation be done. Thinking that I might make a rapid enterostomy, or perhaps do an exsection and short circuit the intestinal tract, I consented to undertake it. I made a median incision. When the abdomen was opened there presented immediately a tremendous, sausage-like mass, which, upon rapid investigation, was found to be made up of the ileum invaginated into the colon, then the appendix, the cecum, the ascending and transverse colon invaginated into the descending colon and rectum. The colon of the intussuscipiens, and the feel and smell of the mass showed nearly the whole intussusceptum to be necrotic. It was obviously impossible to save the child if this were left in. I had to exsect the necrotic mass at all events. In order to determine where the necrosis began and ended, I thought at first of slitting the whole intussuscipiens, but this was such a long area of large intestine that I was afraid of the delay which inevitable hemorrhage would occasion, also of the sepsis which would follow the escape into the peritoneal cavity of the necrotic and foul

fluids from the intestine. While rapidly casting about in my mind for a proper solution of the difficulty, I was feeling down into the right iliac region along the invagination, and the thought occurred that it might be possible to reduce that part of the intestine which was not altogether necrosed and adherent. I tried the milking process and to my astonishment and great relief, I very quickly reduced the invagination as far as the transverse colon; the walls of the descending colon below this were still good. The transverse colon was ulcerated in many places, and beyond this, that is to say the proximal end of the colon, the gut seemed quite necrotic. I rapidly clamped off the end of the lower part of the transverse colon and the ilium, and after tying the mesenteries in sections, I cut through and delivered the intervening mass of intestine, consisting of a part of the ileum, of the appendix, the cecum and most of the transverse colon. I then anatomosed the ileum with the colon at its splenic flexion.

Considering his condition, the boy stood the operation remarkably well. He was, however, too weak to withstand the sepsis, and he died eight hours after the operation.

This is also an exceedingly interesting case, and it presents certain points well worth fixing in our minds. First, the age of the child, 9 years; this age, in my experience, brings a patient within the adult peculiarities and series of phenomena. This was an extreme case of chronic intussusception. Chronic intussusception belongs especially to adult life. Second, the long continuance of the case is remarkable. It is mere speculation, but it seems to me a rational explanation of the series of symptoms and physical changes to suppose the first attack to have been an appendicitis; the peristaltic efforts of the ileum to overcome the ileo-cecal valve paresis might have resulted in an intussusception at the ileo-cecal junction, and so on downward. I simply throw this out as a suggestion. Third, this case strikingly exhibits the fact that I have many times remarked: *a tumor may not be felt in the early stages of an intussusception.* Fourth, the amazing vitality of this boy; he lived five months after the beginning of an intussusception. Fifth, the remarkable and very rare kind and extent of the intussusception.

REPORT OF THE WYOMING VALLEY FREE TUBERCULOSIS DISPENSARY.

BY DR. CHARLES H. MINER, SECRETARY, WILKES-BARRE, PA.

READ SEPTEMBER 5, 1906.

At the last regular meeting of the Medical Society on June 20, Dr. Joseph Walsh read his very interesting and valuable paper on "The Crusade Against Tuberculosis in Europe." On a motion by Dr. Stewart, a committee, consisting of Dr. Stewart, Dr. Knapp and myself were appointed by the Chair to decide as to the possibility of establishing a free dispensary in this city for tubercular cases. Dr. Walsh urged the committee to open a dispensary at once and not pay too much attention to the financial side at the beginning, stating his belief that one patient under treatment was better than $5,000 in hand, and suggesting that the dispensary be established with the certainty that its merits would be recognized and it supported.

The committee met on June 25th and decided to organize "The Wyoming Valley Society for the Prevention and Treatment of Tuberculosis," and to open a free dispensary in Wilkes-Barre. We were fortunate in securing a fine body of men representing the entire Valley to act as a board of directors of the society. After considerable hard work we secured a suitable location for the dispensary. The following gentlemen met on Friday, July 6, and organized the society and approved of the location of the dispensary: Maj. Irving A. Stearns, president; Gen. C. Bow Dougherty, vice president; R. P. Brodhead, vice-president; Dr. Chas. H. Miner, secretary, and William H. Conyngham, treasurer; J. C. Brader, J. A. Goldsmith, R. M. Hughes, Dr. F. C. Johnson, Dr. C. P. Knapp, Fred J. Stegmaier, Dr. W. S. Stewart, Martin J. Walsh and Ambrose J. West, directors.

The Luzerne County Medical Society, through whose initiative the dispensary was started, are represented by your committee on the board of directors. The following were selected as attending physicians and bacteriologists: Dr. Walter Davis,

Dr. J. W. Geist, Dr. C. R. Grosser, Dr. C. H. Miner, Dr. R. L. Wadhams, Dr. M. B. Ahlborn and Dr. S. D. Wyckoff.

Through the interest of Dr. Walsh we are able to secure Miss Cornell, from the Phipps Institute in Philadelphia, to assist in the work of the dispensary. Miss Cornell had been three years at the Phipps Institute, and had been superintendent and in charge of the Training School. The dispensary was opened July 13, just one week later, at 173 S. Main street.

The building used for the dispensary was cleaned, freshly painted and furnished and has two rooms on the ground floor used as a waiting room and office, and upstairs there are three smaller examining rooms. The dispensary has been opened two months or sixteen times since July 13, and we are proud of our success.

Miss Cornell has prepared a report of the work already accomplished at the dispensary in two months:

Number of patients applying at the dispensary for examination and treatment	49
Number of patients sent to the West Mountain Sanitorium, Scranton	4
Number of patients sent to White Haven Sanitorium	6
Number of patients sent to Phipps Institute, Phil'a	1
Number sent to the Retreat (awaiting admission to Phipps)	1
Patients on list for White Haven	4

Patients at West Mountain Sanitorium:

One has gained 14 pounds.

A second has gained 10 pounds.

A third has gained 6 pounds.

A fourth has just been admitted, who had already gained 2½ pounds at home in one week.

Patients at the White Haven Sanatorium:

One gained 7½ pounds in two weeks, then left the sanatorium.

A second has gained 9 pounds in two and one-half weeks.

A third has gained 3¾ pounds in two weeks.

Reports on the remaining three cases have not been received, as they were recently admitted.

Report on a few of the patients remaining at home and treated at the dispensary:

One man working in the mines every day has gained 3¾ pounds.

Another man gained 7½ pounds while at confining work every day. He has been taking two quarts of milk and a dozen and half eggs daily.

A third has gained 3¾ pounds.

A fourth 4 pounds.

A fifth 6 pounds in three weeks. The society supply him with three quarts of milk a day.

A sixth has gained one pound though working hard every day.

One patient has died.

One patient has not been able to buy milk and eggs and lost three pounds in one week. We are now supplying him with two quarts of milk a day.

Total number of pounds gained by the patients of whom we have a record is 106.

Pounds lost by patients, 3¾ pounds.

Number of patients examined by Dr. Davis.....	21
Number of patients examined by Dr. Miner.....	20
Number of patients examined by Dr. Geist.....	8
Number of patients examined by Dr. Grosser.....	2
Number of patients examined by Dr. Wadhams.....	1
	52

CONTRIBUTIONS.

One hundred and thirty-seven friends of the society have generously contributed over $2000.00 for the work. Many firms and individuals have contributed furniture, lumber, work, articles for sale, etc. Oppenheim's orchestra, assisted by many friends, gave their services at the carnival and concert on August 20, and earned $135 for the society. Mr. F. Luis Mora, a famous New York artist, painted a picture for the society worth over $200, which is now on exhibition in Voorhis & Mur-

ray's window. Seven members of the Medical Society have contributed money for the work. Thirty-six have accepted membership on our membership committee, but only nine have sent in lists of people they are willing to ask for contributions.

This work was started here in this room, and we hope for enthusiastic support from every member of the Luzerne County Medical Society. We believe that the prevention of tuberculosis is the greatest crusade of the present century and our work cannot be a complete success without the interest and assistance of every physician in the valley.

The daily and weekly papers in the valley have taken a great interest in our work and have been very generous in printing editorials, reports and general articles about the prevention of tuberculosis. Believing one part of the work to be an educational campaign we have made free use of printer's ink and have mailed thousands of circulars all over the valley.

We hope to have a tuberculosis exhibit in Wilkes-Barre this winter and to educate all the people in methods of prevention and treatment.

AN INTERESTING CASE OF GALL-STONE SURGERY.

BY DR. W. G. WEAVER, WILKES-BARRE, PA.

READ SEPTEMBER 5, 1906.

1127 CALCULI REMOVED.

Mrs. Lizzie Stegoria, age 46. Admitted to Wilkes-Barre City Hospital, with diagnosis, before entering, of nephrolithiasis affecting right kidney. X-ray examination made by Dr. Wadhams failed to reveal stone in kidney or ureter. The following history is recorded by Dr. McFadyen, the resident physician:

"Patient has been ill for about two weeks previous to admission, being sent to the hospital as a case of nephrolithiasis, affecting the right kidney. She gives an indefinite history of paroxysmal attacks of pain in the right hypochondriac region and extending through to the back. At no time has there

been any jaundice. Physical examination shows a large obese individual—well nourished, no evidence of anemia, jaundice or the cachexia of cancer. Pressure over the right hypochondriac region elicits extreme tenderness, especially over the area of the gall bladder. There is no mass palpable. Gastric symptoms are negative. The X-ray reveals nothing assisting towards a diagnosis of the condition.

"January 27th taken to the operating room, laparotomy performed, 1127 gall stones removed. The gall bladder had ruptured and a number of the stones were in a sac of new formation outside of the gall bladder."

Allusion is made by Dr. McFadyen to the rupture of the gall-bladder. This circumstance and the large number of calculi found, mark this case as a most interesting and remarkable one. The conditions revealed at the time of operation need further elaboration than the brief history given above. As stated, the patient was large and very obese, thus adding to the difficulty of the operation. Upon opening the abdominal cavity, most extensive adhesions were encountered. During my gentle efforts to separate the overlying omentum there was a sudden escape of an enormous amount of bile. This was for a moment disconcerting, but I soon discovered that the bile was escaping from a sac outside of the gall-bladder. Above I could feel the gall-bladder filled with calculi, while only a very few small ones were found in the sac formed by the adhesions. The gall-bladder being exposed I proceeded to open it, and removed an enormous number of small calculi as well as the large ones exhibited. The operating room nurses afterwards counted all the calculi removed, and reported the number to be 1127. The gall-bladder being found to be ruptured and the vitality of much of the rest of it being doubtful, the question of its removal was considered. The adhesions being so extensive and intimate and the new sac thus formed being so complete, I thought the prudent course to take was simply to drain. I accordingly passed one tube into the gall-bladder beyond the ruptured portion, down to the duct and anchored it by sutures

of cat-gut. Another one was passed into the sac outside of the gall-bladder.

The patient did well from the time of operation. The flow of bile was large and uninterrupted. At first it seemed to flow from both tubes, but in about forty-eight hours it discharged only from the tube in the gall-bladder. On the ninth day the tube outside the gall bladder was removed, the other being retained for some time afterward. March 5th patient was out of bed with wound nearly healed. March 25th patient was discharged cured. Complete healing of sinus.

A study of the pulse and temperature is interesting. Upon admission January 19th the temperature was 99.4°F., pulse 120. The pulse remained rather rapid until the morning of the 21st, when the temperature dropped to 96°F., and the pulse to 96. At this time patient had a very severe paroxysm of pain, and her condition showed a state of shock. We had not then had an examination by the X-ray, and as the diagnosis of stone in the kidney had been made, I concluded to await this examination. The operation was delayed until January 27th, partly for this examination, and partly on account of the condition of the patient following the low temperature of January 19th. I am convinced that the rupture of the gall-bladder occurred at that time, and that the great tenderness following was due to the rupture and the resulting adhesions. A strange part of the case is the fact that at no time before or after admission was there jaundice.

EXTENSIVE RESECTION OF THE RIGHT HUMERUS.

BY DR. W. G. WEAVER, WILKES-BARRE, PA.

READ SEPTEMBER 5, 1906.

I have the pleasure to-night of exhibiting a useful arm following an extensive resection of the humerus. You will observe the extensive flexion and perfect pronation and supination of the forearm.

The patient is Charles Bandinski, age 13. He was admitted to the hospital January 19, 1906, suffering from an extensive compound comminuted fracture of the right humerus, caused by a loaded car passing over it. I saw him about 10:30 P. M., on the evening of admission. He was taken to the operating room, where an examination revealed pulsation of the radial artery, and an uninjured forearm. The comminution both of the bone and soft parts of the humerus, however, was so extensive that the question of amputating at the shoulder joint had to be considered.

Owing to the fact that the artery was intact, I concluded to try conservative surgery. The crushed and mangled member was filled with culm, and the muscles of the anterior part of the arm were crushed to a pulp, excepting a very narrow bridge of the biceps muscle. How the artery and nerve escaped injury is a mystery. The musculo-spiral nerve at the point of its emergence from the biceps was exposed to view but apparently little injured.

I proceeded to resect the crushed portion of the bone. We estimated the length of section removed to be five inches. Measurement now shows four inches. I then drilled both ends, and passed copper wire laterally and antero-posteriorly. This firmly anchored the ends, so that there was practically no motion between them. I resected the ragged and crushed ends of the muscles, and sutured them with cat-gut, using free drainage. This shortening of the arm caused much bunching of the muscles posteriorly, where there was not so much destruction of the soft parts. No splint was used other than that afforded by the body, against which the arm was

bound. For the first forty-eight hours the propriety of the operation was in doubt. There was great swelling, and the color of the arm indicated possible gangrene. I incised freely and the swelling subsided and the natural color returned. The temperature, as the chart shows, was satisfactory. It fluctuated between 98°F. and 101°F., until 2 A. M., of the sixth day, when it reached 102°F. After that the temperature and pulse gradually approached normal. The wound healed slowly and on May 5th I concluded to remove the copper wire. This improved the healing process, though a small sinus remains, due undoubtedly to a little necrosed bone. The arm is strong and straight, as you observe.

It was impossible to prevent infection of the wires in this case, and the slight necrosis is due to this circumstance. The wires probably should have been removed earlier, but fear of breaking up union restrained me from making the attempt sooner.

I exhibit the skiagraph, showing the condition before the wires were removed. The main object of securing the radiograph was to determine before etherization the position of the head of the humerus. For some time I dressed this case daily myself, but afterward entrusted the dressing to the resident. After a few weeks I called to note the progress of the healing, and to my surprise discovered what seemed to be a dislocation. The skiagraph shows only a dropping of the arm from wasting of the muscles. Massage and electricity speedily improved this condition, till now it is little noticeable.

The arm is such a useful member that we are justified in making desperate efforts to save it. An artificial leg may be more useful than a deformed natural one. An artificial arm is only useful for cosmetic purposes. The results obtained in the case presented, add another encouragement in attempts at conservative surgery of the arm.

DISEASES OF THE FALLOPIAN TUBES.

BY DR. C. R. GROSSER, WILKES-BARRE, PA.
READ SEPTEMBER 19, 1906.

Anatomy.—The average length of the normal fallopian tube is four inches (10 centimeters). The tubes are often of unequal length, the differences sometimes being equal to 1 centimeter. The fallopian tubes run from the cornua of the uterus, in the upper edges of the broad ligament, to the ovaries. They are divided into the following parts: The uterine ostium, the isthmus, the ampulla and the infundibulum, a funnel-shaped expansion at the end of the tube, in the bottom of which is the abdominal ostium and the fimbriae. The fimbriae are formed by the outward bulging of the exuberant mucous membrane. The fallopian tubes have three coats, the mucous, muscular, and peritoneal. The blood vessels are a terminal branch of the uterine artery, given off in front of the ovarian ligament, this anastimoses with a branch of the ovarian artery.

Diseases of the tubes.—The tubes may be congested; they may be displaced; they are subject to a variety of inflammations, and they may be the seat of neoplasms.

Congestion of the tubes may be the result of obstructed circulation, of a systemtic infection, such as cholera, of external burns, or of phosphorus poisoning. Circulation is obstructed by torsion, by displacements of the tubes, as in inguinal hernia, and the inversion of the uterus, by thrombosis of the spermatic vein, by passive congestion of pelvic organs, or by heart or liver diseases.

Displacements of the tubes accompany those of the uterus. They are necessarily carried downward and backward in retroflexion; in prolapse they lie partly, at least, in the cup formed by the inverted uterus. They have been found in inguinal and crural hernias, etc.

Inflammation of the tubes is the disease that most commonly is met with. The condition is, as a rule, secondary to

endometritis, the mucous membrane of the tubes becoming inflamed by the direct extension from the mucous membrane of the uterus. Inflammations of the tubes are non-infectious and infectious. The former may be due to cold, injuries, irritating substances injected into the uterus, such as iodine, and to the infectious fevers. The infectious inflammations, due to bacteria, occur much more frequently. The most common causes of salpingitis are sepsis and gonorrhea. Infection of the tubes can occur from the peritoneum, the intestines, the uterus, and the blood and lymph channels. Gonococci most commonly advance along the uterine mucosa, through the uterine ostium to the mucosa of the tube. Colon bacilli and staphylococci do likewise. Streptococci usually penetrate the myometrium and reach the tubes by the way of lymphatics and blood channels. It is usually impossible to demonstrate the infecting agent in a pyogenic inflammation of the tubes. The micro-organisms expire by being confined in a narrow space, destroyed by their own secretions and the compression to which the tubal contents are subjected. The kind of infection can best be inferred from the patient's history and other physical signs. In the first stages of acute salpingitis, the disease is confined to the mucous membrane of the tube. Quickly, however, it extends to the muscular and peritoneal coats. The whole tube is soft, succulent and friable, and may be easily ruptured by bending. A drop of pus is often seen exuding from the abdominal ostium. In acute salpingitis the tube may become enlarged in a week or ten days to the size of a thumb or index finger. It is probable that a good many cases of acute salpingitis undergo resolution, with restoration of the tubs to its normal condition. In abdominal operations performed for other conditions, indications are not infrequently found of an old cured attack of salpingitis. In some cases the traces left are a few fine adhesions between the tube and the neighboring structures, such as the ovary, uterus, anterior and posterior surfaces of the broad ligament, or a loop of intestine. When resolution and cure do not occur, a speedy fatal result may take place by direct extension of the infection from the tube

to the general peritoneum producing general peritonitis. All degrees may exist between this extreme and mild forms of localized peritonitis.

Chronic Salpingitis.—Salpingitis is usually seen in the chronic form. An acute primary salpingitis must not be confounded with an acute attack of inflammation in an old chronic case. In gonorrheal salpingitis the disease is usually subacute or chronic from the beginning, as are other symptoms of gonorrhea in women, like gonorrheal cervictis and endometritis. The most frequent form of acute salpingitis met with occurs as a result of septic infection after abortion, or miscarriage or of a labor. In chronic salpingitis the disease usually extends through the peritoneal coat, and inflammatory adhesions take place between the tube and surrounding structures. The tube is often found adherent to the posterior aspect of the uterus, ovary, and broad ligaments. The most usual seat of adhesions is about the abdominal ostium. These are caused by leakage of septic material into the peritoneal cavity. This escape is slow and adhesions are gradually formed, gluing the ostium to adjacent structures and thereby preventing further escape of the tubal contents.

Hydro-salpinx is a form of tubal inflammation in which the abdominal and possibly the uterine ostium is closed and in which there is an accumulation of serous fluid in the tubal canal, usually in its outer two-thirds. The distention of the tubes is frequently considerable; their walls are atrophic and thin. The fluid from a hydrosalpinx is usually sterile and readily absorbed. There is a previous history of puerperal infection in the majority of cases.

Hematosalpinx occurs when, from any cause, hemorrhage takes place into a tube that had previously been closed by inflammatory action. Such an accident may be caused by traumatism or by torsion of the pedicle of a tubal cyst. The origin of the blood might possibly be a hemorrhage from the ovary or a reflex from the uterine cavity. The most common cause is from the mucous membrane of the tube, as the result of tubal menstruation or inflammation.

Tuberculosis of the tubes is more common than in any other portion of the genital tract. This is mostly bilateral. In an advanced stage the tube is thickened, distended, hard and lumpy to the touch.

Neoplasum of the tubes.—Polyps, papillomata, sarcomata, fibromyomata, dermoids, lipomata, carcinomata, lymphangioma, enchondroma cysts, etc., have been found.

In syphilis the tubes are usually thickened, infiltrated, tortuous and the seat of gummae.

Symptoms.—The symptoms of acute salpingitis are sometimes obscured by the accompanying symptoms of endometritis, ovarian congestion and localized peritonitis. The most prominent symptom is pain, usually localized in the groin above the middle of Poupart's ligament. If both tubes are alike diseased the more acute pain is felt on the left side. The pain is usually described as shooting, stabbing, boring, burning, or an intense ache. The patient walks very cautiously, the body is bent forward and the hands grasp the lower part of the abdomen. There is nearly always an exacerbation of pain just before menstruation, which is greatly relieved when the flow appears, returning again after it ceases. Sometimes instead of pain being localized, it may be felt in distant regions, as pain in the back of the neck, the top of the head, the breast, axilla or the epigastrium. The rectum is also the seat of frequent pain. There is often a history of leucorrhoea on account of the infection of the entire endometrium which usually precedes the infection of the tube. Menorrhagia is a very common symptom. The quantity of blood lost is very great. The patient with diseased tubes is usually thin, has a bad color, an anxious expression, and ages prematurely. She may present the waxy pallor of extreme anemia or a cachectic appearance from toxemia, suggesting malignancy or tuberculosis. Symptoms of local peritonitis are present, such as elevated temperature, rapid pulse, local or general distention and tenderness. On bimanual examination it is usual to find the diseased tube, or tubes, thickened, distended, prolapsed into Douglas' pouch and adherent. In cases of acute salpingitis, the slightest touch of

the internal finger in the post vaginal vault elicits a cry of pain. There is nothing so sensitive in the lower abdominal cavity as an acute pyosalpinx with involvement of the ovary, except a tubal gestation sac. In chronic cases there is almost always exaggerated tenderness, but rarely agonizing pain on palpation. Acute attacks of pain, fever and other disturbances also occur in cases of chronic salpingitis from acute re-infection of the diseased tube. In chronic salpingitis, the tube usually falls below its normal level, and may be felt by the vaginal finger lying beside the uterus, or behind it in Douglas' pouch. By careful palpation the connection of the tubal tumor with the uterus may be traced. The tube may be felt as a hard mass or cord, or as a cystic tumor, with the ovary lying in its concavity, or as a tortuous, sausage-shaped mass. Sterility is the rule in salpingitis. The disease destroys the ciliae of the mucous membrane and renders the passage of the ovum into the uterus difficult. When the abdominal ostia are closed, absolute sterility is present. There is not so much tenderness in hydro- and hematosalpinx; in these conditions the tube walls are very thin and a distinct fluctuation may be found. If the tube is very much thickened at the uterine cornu, and if it is knobby to the touch, the suspicion of tuberculosis must be entertained. The rarer tumors of the tube mentioned can only be diagnosed by abdominal pathological examination. A solid tumor, however, excessively painful, associated with cachexia and ascites, indicates a malignant growth. The treatment of tubal inflammation is preventive, palliative or curative. In the preventive treatment the man who has gonorrhea should be warned against matrimony until repeated bacteriological examinations of the urethral discharge show that it is sterile. The man who is already married and contracts gonorrhoea must be informed of the danger of infecting his wife. Young men should be warned that the prevalent idea of gonorrhoea being a small matter and easily cured, with permanent results, is not so.

Palliative treatment.—In acute salpingitis, with fever and intense pain, absolute rest in bed is required. Hot douches of a gallon of water, temperature about 110 degrees to 120 de-

grees F., night and morning. A free evacuation of the bowels must be secured by mild salines, like Rochelle salts, Kutnow's salts, etc. After the douche a vaginal tampon saturated with boroglycerid or ichthyol, four parts to six of glycerine should be inserted and pushed well up into the vault. Ice bags on the lower abdomen usually gives the greatest comfort as an external application. Sometimes cold is uncomfortable to the patient or fails to relieve the pain, in this case moist heat, in the shape of a large flax-seed poultice should be substituted.

Curative treatment of salpingitis is usually operative. It is indicated in very large pus tubes, and in cases with so much suffering that the patient urgently demands relief. After failure of palliative treatment, in women who can not afford to be invalids, in those who deliberately select radical treatment for relief of their symptoms, and for the relief of sterility without other serious symptoms. The operations available for the cure of salpingitis are the severance of adhesions and reposition of the tubes, salpingostomy, salpingectomy, partial or complete, salpingo-oophorectomy, and hysterectomy with removal of the tubes and ovaries. The tubes may be approached for any operation required by the vaginal or abdominal route.

A CASE OF FOLLICULAR ODONTOMA.

BY DR. S. P. MENGEL, PARSONS, PA.

READ SEPTEMBER 19, 1906.

Miss P. M., age 17 years, consulted me during May, 1906, for a growth on the right side of inferior maxilla.

The history of the case was as follows: About six years previous, an attempt was made to extract her right canine tooth (temporary). This was done by attaching one end of a string to the tooth and the other end to a door knob. The door was forcibly shut but the operation was unsuccessful and the tooth, much loosened, gradually grew fast again.

During April or May, 1902, the patient noticed a small

elevation or growth situated below this tooth, but thought nothing of it. This growth was painless and gradually increased in size, so that when I was consulted, it was quite noticeable on the outside. In fact, it was this disfigurement rather than the tumor that worried her.

On examination I found an indurated tumor, considerably larger than a good sized walnut, situated on the right horizontal position of the inferior maxilla and extending forward beyond the median line. The patient insisted that the canine tooth on this side, although considerably smaller that the corresponding one on the opposite side was her permanent and not her temporary tooth. In this she was mistaken.

Under ether, the cyst was freely incised and part of its outer wall cut away, allowing the escape of a viscid mucous and exposing a hollow osseous cavity in the expanded bone three-fourths of an inch wide and one and one-half inches long. From this cavity, lying in a horizontal position beneath the incisor teeth, was extracted the fully developed canine tooth with entire fibrous capsule.

The wound was daily irrigated and packed with sterilized gauze until it closed leaving no difference from the opposite side except the absence of the tooth.

Did the heroic attempt made to extract the temporary tooth have anything to do in the causation of the cyst? We do not know.

I report this case for two reasons. First, because odontomes are comparatively rare, and second, on account of their close resemblance to sarcoma of these parts. It is claimed that these growths are seldom diagnosed before operation, and that often needlessly severe operations are performed where a mere extraction of the tooth or enucleation of tumor would suffice.

CASE OF MULTIPLE SARCOMA.

REPORTED BY DR. G. T. MATLACK, WILKES-BARRE, PA.
READ OCTOBER 13, 1906.

Mrs. F. N.; age, 36; married; one healthy child, six years old. Has always enjoyed good health prior to present illness. Father died at age of sixty-eight of tuberculosis; mother died at the age of thirty-one, miscarriage; remainder of family history is good.

When first seen, January 4, 1903, patient had a growth in the upper part of thigh, near groin, size of a large walnut; very painful and tender to touch. This growth first appeared three months previously as a small, hard nodule, which gradually increased in size. Dr. George W. Guthrie saw the patient, in consultation, January 6th, and concurred in the advisability of operation. On January 9th, a hard tumor, the size of a lemon, was removed; the wound healed readily. This tumor proved to be a round celled sarcoma by microscopical examination, made by Dr. R. L. Wadhams.

In February of the same year, a hard nodule appeared on the anterior part of the left knee, which soon became very painful, and increasing in size, apparently of the same character as the previous growth. It was removed one month after being first noticed, healed readily and gave no further trouble.

The patient seemed to be enjoying very good health until March, 1904, when she complained of some discomfort and slight pain at times in the upper part of the body of the left scapula, but there was nothing to be seen or felt in the shape of a growth at this time. In about three weeks, however, a hard tumor could be mapped out, which continued to grow and become very painful. On June 28, 1904, a hard growth, the size of a large walnut, was removed, which was well down in the body and spine of the scapula, and partially adherent to same. Two weeks after this operation a growth was noticed in the right breast, becoming painful and increasing in size. The entire breast was removed in August, 1904, which contained a

good-sized hard growth; this was six weeks after the removal of the growth from the scapula. Both of these wounds healed very readily after operation. Each of these four growths were examined microscopically and each one proved to be a round celled sarcoma.

At this time I wrote Dr. Coley of New York, with a brief report of the case, and to ascertain the advisability of using his fluid in this case. He said in his reply, that this form of cancer was the least amenable to treatment with the fluid, but would advise using it. It was begun at once, which was in August, 1904, injecting in the region of the wounds of the breast and shoulder, and continued until the latter part of October, when it was stopped on account of the severe constitutional symptoms, and pain which it produced at nearly every injection, and as the growth at this time had reappeared at the site of the operation on the scapula, the patient was heartily discouraged, and was not willing to continue the injections of Coley's fluid. She was admitted to the Wilkes-Barre City Hospital November 9, 1904, when the growth that reappeared in the scapula was removed.

In December, following, there was a reappearance of the disease in the chest wall at the site of the breast operation. This was excised and thorough curettement of surrounding tissue, including small portions of two ribs. One month after this operation it again appeared in the scapular region.

Patient was again operated upon by opening up in the region of the original operation of the shoulder, removing all the diseased tissue that was possible, including a portion of the spine of scapula. We had now, two large open wounds, one over the left scapula, the other in the right chest wall, both healing by granulation.

The X-ray, a very important part of the treatment, was given by Dr. Wadhams throughout the course of the disease. It was begun January 17, 1903, and given at varying intervals until December 7, 1905, at which time it was stopped, as there was no evidence of the disease returning. The regions of the scapula and breast caused treatment from July 18, 1904,

to December 7, 1905. The patient has remained well since, has gained in weight and seems perfectly well at this time.

It is now one year and ten months since the last operation; too early, of course, to consider her safe from a recurrence.

The case is interesting to me on account of the marked dissemination of the growth, the very malignant character of this form of tumor, and the progress she has already made towards recovery.

CASE OF STONE IN KIDNEY.

REPORTED BY DR. G. W. GUTHRIE, WILKES-BARRE, PA.
READ OCTOBER 13, 1906.

H. G. E.; age, 33; married; American; clerk in coal office. I saw him first on May 17, 1906, when he was brought to my office by Dr. Wilcox.

He complained of pain in right loin, extending to the inside of the thigh, and down the sciatic nerve. He had been a sufferer for ten years, had been treated for rheumatism by eminent men in Philadelphia and elsewhere. An Osteopath had rubbed him to the tune of twenty-five dollars, and a wandering quack had stuck him for thirty-eight dollars.

Urine was smoky, acid and markedly albuminous.

Diagnosis.—Stone in right kidney. Gave piperazine, grain XV. daily, in a quart of water, and asked for X-ray picture.

On June 21st, he reported again; conditions were unchanged. Radiograph presented, not definite. Operation advised.

Patient entered Wilkes-Barre City Hospital June 28th. Operation next day. Incision from twelfth rib to crest of ilium parallel to erector spinae muscle. Kidney large, fatty capsule very adherent, delivery difficult. Stone found in pelvis and was removed by incision in converse border, extending through lower half of the organ. The accompanying stone was delivered with forceps. It is composed of oxalate of lime and weighs eighty-four and a half grains; a number of millet-seed-like granules were removed with scoop, which are also

shown, weighing two and one-quarter grains. Hemorrhage was quite profuse but was arrested by stitching the sides of incision together with catgut.

Patient left the hospital July 19, 1906, and has been well since.

REPORT OF A CASE OF HEMATOMA.

BY DR. CHARLES LONG, WILKES-BARRE, PA.

READ OCTOBER 13, 1906.

Mrs. J. H.; age, thirty-six; VI. Para.

September 5, 1906. Called to see the patient at 1 P. M. She had been in labor since 7 A. M. under the care of a midwife.

Present condition.—Head in posterior occipital position that had rotated half way around and engaged below the brim of the pelvis and had probably remained in that position for several hours, making no headway.

There was no difficulty in the instrumental delivery, the head rotating back to the post occipital position. I left the patient comfortable at 2 P. M.

At 5 P. M., in answer to a hurry call, the following conditions were found: The patient was suffering most intense pain and seemed to be having labor pains again. An external examination of the abdomen showed the uterus to be well contracted and normal; but on exposing the perineum, it certainly did appear as if another head was emerging from the vagina. A tumor the size of a child's head was present and the perineum bulged and presented exactly the same appearance as during the last few pains of labor. This proved to be a hematoma of the left labium, which entirely occluded the vaginal entrance, had burrowed between the vagina and rectum and some distance on the right side of the vaginal wall and extended posteriorly in the vaginal wall to the external os. It was just possible to get the index finger in the vagina, but the cervix could not be reached.

Not having a scalpel in my bag, I bored through the mucous membrane with my finger nail, removed the clots and packed with sterile gauze. There was no further hemorrhage and convalescence was uninterrupted.

Hematoma labii are not rare, but the large size, the intense suffering and the method of treatment makes a report of this case justifiable.

CHOREA—COMMONLY CALLED ST. VITUS DANCE.

BY DR. CHARLES L. ASHLEY, PLYMOUTH, PA.

READ OCTOBER 30, 1906.

Chorea, as defined by Dr. Holt, is a functional nervous disease, characterized by aimless, irregular movements of any or all the voluntary muscles. These movements are of a somewhat spasmodic character, often accompanied by an apparent or real loss of power in the groups of muscles affected and by a mental condition of extreme irritability.

The type of chorea described by Sydenham is a more or less acute disease, in certain respects resembling an acute infectious process, and by some regarded as such. It has a special predilection for children, is characterized by the same involuntary muscular contractions, by a great liability to endocarditis, and a tendency to recurrence, particularly during the spring and fall.

Some confusion arises from the fact that under the name "chorea" are included several forms of nervous disease and degeneracy, having as their common and characteristic symptoms, jerky, arrhythmic, involuntary, inco-ordinate movements, while differing widely from one another in nature, causation, pathology, prognosis and general symptomatology. This confusion is further added to by those who write upon the subject as to what conditions shall and what shall not be included among the choreas.

There are ten, or possibly, eleven forms described:

1. Sydenham's chorea (including chorea insaniens).
2. Endemic chorea.
3. Electric chorea.
4. Hysterical chorea.
5. Saltatory spasm.
6. Oscillatory spasm.
7. Habit spasm or tic co-ordine.
8. Post Hemiplegic chorea.
9. Chronic adult chorea.
10. Huntington's chorea.

Of these forms the first, or Sydenham's chorea (common St. Vitus dance), chorea minor or acute curable chorea, and much the most common and important to us, will be described.

The onset of this disease is often foreshadowed by symptoms covering a prodromal period of a few days to a few weeks. These premonitory symptoms consist in general nervousness, a tendency to fidget and uneasiness, a change in disposition, irritability and emotional weakness, headache, vague pains, some impairment of general health, and possibly the occurrence of some one of the acute infectious diseases. The disease always develops gradually and with varying rapidity in different cases, the onset being marked by the appearance of the characteristic choreic movements. These are peculiar, jerky, often lightening-like, choreic spasm, involving the muscles of the face and head, neck, trunk and extremities, usually more pronounced in the face and arms, and often more pronounced in one-half of the body. The movements are sudden in the onset and as suddenly cease; they are irregular in force and direction, markedly inco-odinate and differ in character, from any other form of abnormal motor discharge known.

They result in sudden and strange grimaces or faces, if you like, and facial twitchings; sudden closure and opening of the eyes and mouth; sudden seizure to grasp, twisting movements of the arms, peculiar dancing and bobbing movements of the feet; all of these movements seeming at times semi-purposeful, leading to the idea on the part of the onlooker that they are due to bad habit or awkardness and could be prevented.

The movements vary in intensity from slight, scarcely noticeable twitchings of co-ordinate groups of muscles, occurring at intervals, to violent and almost continuous choreic spasmodic contractions of nearly or quite all of the voluntary muscles of the body, resulting in writhings and contortions which completely incapacitate the patient and render necessary confinement to bed. The movements may occur when the

muscles are at rest, but they are often precipitated or intensified by voluntary muscular effort of any kind. They are increased by efforts to prevent them, and by anything which directs attention to them. They cease entirely during sleep.

In some cases speech is affected, giving rise to peculiar jerking out of words, explosive utterances, hesitation, or indistinctness, which may, in some cases, amount to entire inability to talk. On account of the inco-ordinate action of the muscles of the arms and hands, the patient may find difficulty in feeding himself.

Psychical abnormalities are the rule. These vary from the slight irritability and altered disposition seen in early stages of simple cases, to marked intellectual impairment, with loss of memory, confusion of ideas, inability to concentrate attention and grave emotional disorder of a melancholic cast. Occasionally delirium will occur, giving rise to the clinical subdivision, "chorea insaniens." In which case the movements are violent and constant, speech is much affected, insomnia is marked, fever may develop, followed in some cases by a typhoid condition and death.

Now, what are the causes and pathological changes, if any, giving rise to this group of symptoms. I have described the cases as we ordinarily see them, without reference to any changes in the blood, urine, etc. In general terms, choreic movements of all kinds are primarily due to inherent nervous or better, neuronic weakness or irritability, or defective insulation in the line of motor discharge. Yet, no definite lesion can be ascribed to the disease itself, although a great variety of lesions have been described. Chief among them is the embolic theory, which presupposes the existence of a chronic endocarditis, the fragments of fibrin being washed from the valves, and carried into the circulation to the cerebral vessels. But since emboli are found only in a small majority of cases, they cannot be the sole cause of the disease.

The infectious theory has been advanced by some writers. Some cases seem unquestionably due to micro-organismal activity, as in some cases, the same micro-organism has been

found in the brain, heart, blood-vessels and in the vegetations of the valves.

Many cases develop suddenly, following fright or some other nervous shock, or are preceded by mental strain, worry or shock of some kind, overwork at school, fear or religious emotions; or by infectious diseases or a toxaemic state such as rheumatism. These cases can scarcely be included in the first two classes.

Another theory is that the choreic movements may result from irritation caused by anti-toxins. The fact that a majority of cases recover completely in the course of a few weeks or months, speaks strongly against any important structural changes in the nervous system.

Another theory presupposes an unstable condition of the higher nerve centers, by which a poison affecting these centers might produce in one person epilepsy, in another general neurasthenia and in a third, chorea. However, the immediate exciting cause is irritation of the cortical motor nerves, from toxic substances in the blood, be it from antitoxications, from infectious diseases, or something else.

Rheumatism is, no doubt, an important etiological factor of chorea, the cardiac lesions being closely associated with it. There is no doubt that both the rheumatic diathesis and cardiac morbid conditions predispose to the disease.

According to Dr. Osler out of one hundred and forty cases of chorea, fifty gave a history of rheumatism, or about thirty-four per cent. Seventy-two cases had endocarditis. Dr. Osler says, the infection is allied to rheumatism but differs from it.

According to Dr. Tyson, about 21% of all cases give a rheumatic history. Chorea follows an attack of scarlet fever in about twenty-five per cent. of all cases, but of seven cases of my own, seen during the last five years, one gave an entirely negative history, while six gave a positive history of rheumatism, two of whom had just recovered from a severe attack of the inflammatory type. In looking over the literature on the subject, I find as much opposition as support to the view that chorea is associated with rheumatism, but the his-

tories of my own cases lead me to believe that there is a very close relation between the two diseases.

Still, neither rheumatism nor heart disease is essential to chorea, but the preponderance of evidence points toward the conclusion, not only that rheumatism and organic heart disease conjointly appear more frequently in the choreic subject than can be accounted for by coincidence, but that the same is true of each of these affections separately. It follows therefore that rheumatism predisposes to chorea, and organic heart disease has the same tendency.

The rule in chorea is a gradual and insidious onset, a slow rise in intensity and distinctness of symptoms, followed by a stationary period of weeks or several months, and a gradual subsidence of the disease, with final recovery. The disease is acute and quite curable, with a natural tendency to recovery, even when not treated at all. Some mild cases recover in a few weeks; two or three months is the duration of the typical forms, although the symptoms may persist for six or more months. Some nervousness and slight twitchings, noticed when the child is startled or excited, may continue for months after recovery, and a species of chronic "habit chorea" may be the final result.

A true chronic chorea rarely or never follows this variety of neurosis in children, but is occasionally seen after acute chorea in adults. In general, however, a chronic chorea of this type is apt to be associated with degeneration of the cortical motor cells and pyramidal tracts, thus differing widely from the form of acute chorea under consideration.

The milder forms of chorea are unattended by danger to life, except through the development of a chronic endocarditis. "Chorea insaniens" is often fatal. Relapses after apparent recovery are not rare. The existence of a complicating rheumatism or endocarditis is thought to favor relapse. However, the result in any case of chorea is largely influenced by the complications and underlying cause.

In view of the frequency with which chorea develops in intelligent and ambitious children of neurotic tendency, who

are overworked at school, something may be done toward preventing the development of the disease, by insisting upon moderation in study, and a proper observance of the rules of physical and mental hygiene. Competition for prizes among young children and any other excess in school work should be forbidden, and the child encouraged to spend as much time as possible out of doors, in healthy games and at play.

Should any indication of chorea appear, the child should be removed from school at once and placed in as good hygienic circumstances as possible. The child's attention should not be directed toward the disease, and the irregular muscular movements and twitchings should not be openly noticed nor be commented upon by others, since self-consciousness and suggestion play an important part in exaggerating the choreic symptoms. Removal from familiar surroundings and relatives, to the country or sea shore, will go far toward relieving the condition. Massage and hypo-therapeutic measures are almost always indicated, and do especial good in the cases in which anemia and general debility are present.

In severe cases rest in bed for a few days or even for a few weeks is advisable. With these non-medicinal restorative measures, the patient will usually recover within a month or two, but in most cases there can be little doubt that restoration is hastened by proper medicinal treatment.

There seems to be but one drug which has met with much success in the hands of all observers, namely, arsenic. It is generally given in the form of Fowler's Solution, beginning with small doses and gradually increasing until the tolerance is reached. It should be well diluted, and given either during meals or shortly after. It is advocated by some writers to increase the doses of arsenic until its full physiological effects are produced. I cannot see the philosophy of such treatment. While it may rapidly reduce the choreic movements, the damage done to the digestive organs is certainly detrimental to the patient's general condition, which is the point that should receive our first attention. Strychnine, silver nitrate, potassium iodid, the zinc salts and cimicifuga have been used

with no very positive results, so arsenic is, from all indications, the remedy par excellence. The general treatment consists in improving the patient's general condition and correcting co-existing disorders. The digestive organs should be put in as good condition as possible. The bowels should be regulated so that at least one good movement a day is secured. Purgatives should be avoided if possible, but an occasional laxative is necessary, if the bowels cannot be regulated by diet and force of habit.

As the urine is often scanty, with a high specific gravity and loaded with phosphates, uric acid and urates, an increased elimination on the part of the kidneys is indicated, and is best brought about by encouraging the use of plenty of drinking water. All medicines should be well diluted for the same reason. Medicinal diurectics are seldom indicated, but if necessary, small doses of acetate of potash may be dissolved in milk, and administered without the patient's knowledge.

The anemia usually present should receive attention. A great difference of opinion exists as to the efficacy of iron, but given in small doses and well diluted it has always been found to act well. Its administration should be carefully watched and care should be taken not to give more than can be readily absorbed. The preparation of iron is largely a matter of choice, but one of the preparations of iron with manganese will answer admirably.

If the insomnia be mild it requires no treatment; but if severe and accompanied by much restlessness, it must be overcome, if possible. This is often a difficult problem to solve. Chloral hydrate is well borne by children, and may be administered in full doses. Five to ten grains in a cup of hot milk, usually produces a good night's sleep.

Hyoscine hydrobromate and the other powerful hypnotics advocated by some writers, should be withheld from children, also, the coal tar preparations. Quinine and the salicylates are well born by choreic patients, in cases of co-existing disorders, such as malaria, rheumatism, etc.

Any source of reflex irritation, such as adenoids, phimosis,

intestinal parasites, etc., may receive palliative treatment, but surgical procedures should be avoided until the choreic symptoms have subsided.

While the importance of the pyogenic micro-organisms in relation to chorea following infectious diseases is becoming more generally recognized, recent bacteriological examinations of the spinal fluid of choreic patients go to show that the relation is a closer one than is generally supposed. Staphylococci have several times been found, and in reported cases I find one of erysipelas which was followed by chorea of a severe type, in which not only had lumbar puncture a favorable therapeutic effect on the movements and the sleeplessness, but also streptococci were demonstrated in the fluid. Streptococci were also found in the blood and urine of this case. However, lumbar puncture cannot be accepted as a rational treatment for all cases of infectious chorea.

After recovery from chorea especial care should be exercised in the education and bringing up of the child. A display of good judgment and the intelligent direction of conduct and development will be well repaid in increased stability and safety from relapse, or from the subsequent occurrence of some other and more serious neurosis.

REPORT OF A CASE, OR RATHER A FAMILY OF CASES.

J. M.; age, forty-four; male; father of five children. Was called to see him September 24, at 9 A. M., and found him suffering from a violent attack of "chorea insaniens." I found, upon inquiry, that slight twitchings began in his face and hands three weeks previous, but for reasons which I will explain further on, he did not consult a physician. I gave him ¼ gr. tablets of morphine No. 4, one to be given every hour for four doses, or until I could return. Upon my return I found him more violent than ever. I then gave him thirty grains of choral in hot milk by mouth and thirty grains by rectum. I left and returned in two hours, but the medicine had no effect whatever. I was compelled to sit by the bedside and administer chloroform at intervals until three-fourths grain of morphine hypodermically would quiet him. This took

almost two hours. I then prescribed large doses of bromide and Fowler's Solution. But for three days I had to use large doses of morphine and regular inhalations of chloroform before I had the violent movements under control. I stopped the bromide after six days, and he is now taking Fowler's Solution, five drops three times daily. The choreic movements are almost under control.

This man, every fall about this time, for the last five years, has had an attack of inflammatory rheumatism, lasting about six weeks and affecting every joint in the body. This year he expected his regular attack, but, I think, the chorea took its place.

I have treated him during three of his attacks of rheumatism, and three years ago, while he was under my care for rheumatism, his son, aged nine, developed acute chorea. He was under my care for three months. Two years ago a daughter, aged thirteen, developed rheumatism of the inflammatory type, and while treating her another daughter developed acute chorea. This case became one of "chorea insaniens," just as violent as her father. She was seen by Dr. Fell, in consultation with me, and I am sorry to say we were not as fortunate in relieving her as I was with her father.

These cases, with some others of the same type, prompted me to write this paper, upon a subject that greatly interests me, and one which I consider one of the most important of childhood. The subject is a broad one, and I feel that with my limited experience, I cannot do it justice, for which you have my humble apology.

DISCUSSION.

Dr. Roe.—I want to compliment Dr. Ashley on the most excellent paper which he has presented here to-night. He has not only covered the ground very thoroughly, but has given a very choice description of this interesting and complex disease.

There is one form of the disease, however, that I do not think he touched upon, and that is the chorea of pregnancy—a rare form, and usually, one rather grave in its character.

I saw an interesting case a few years ago in consultation with Dr. Brooks, who will doubtless recall the case.

The patient was of a neurotic temperament, and I believe, had suffered from chorea in childhood. Her condition did not yield to treatment and finally became so serious that labor had to be induced. I understand she made a good recovery after this was done.

Concerning the treatment of chorea, I have nothing new to offer. I have depended chiefly on the use of Fowler's Solution in ascending doses, given until the physiological effects were produced, usually reaching a dose of about eighteen or twenty drops, and in one case as high as twenty-seven drops three times daily.

It is important to watch carefully for symptoms of heart complication, which will be found to occur in quite a large proportion of cases.

The "rest cure" is adapted to severe types of the disease, and, in fact, in all cases, patients do better who are kept in bed as much of the time as it is possible to do so.

F. E. Cimicifuga has sometimes seemed to give good results in cases that have not improved on arsenic. Iron is very often indicated. Apomorphia and antipyrine have been recommended, but I have never used either of these remedies.

THE NASAL SEPTUM.

DR. ERNEST U. BUCKMAN, WILKES-BARRE, PA.

READ NOVEMBER 7, 1906.

Every part of the human body is wonderfully adapted for the function for which it was created. The delicate air-vesicles of the lungs will not tolerate any irritation, and one cannot imagine any arrangement for the prevention of this better than the structure of the beginning of the air-passage—the nose.

There is a large area of mucous membrane distributed over the six turbinate bodies and the nasal septum for warming, moistening, and cleansing the air before it enters the lungs. The septum was probably intended to divide the air-current equally, and to distribute it thoroughly over the turbinate bodies on both sides. To perform this function perfectly, an absolutely straight, smooth septum is essential.

Such noses were doubtless possessed by the first men and women, but they have degenerated sadly in succeeding ages.

If the design of nature had not been frustrated by various causes resulting from the advancement of civilization, all animal bodies would probably still be perfect in construction, with a wonderful adaptability of each part for its particular function.

Nature is not a bungler. She does the best she can with the materials at hand, but many of the results of the present time are lamentable failures. One seldom sees a perfect nose, either as to internal or external structure. I have never seen a perfect nasal septum. Some approach perfection, but they seldom come under the observation of a rhinologist. Where there is a perfect septum there is no nasal disease. I am convinced that all catarrhal troubles are due to deformed septa.

These deformities are curves, spurs, ridges, and depressions, causing inequality in the size of the two passages, and deflections and disarrangements of the air-currents passing through. These give rise to irritations in various parts of the mucous membrane, leading to inflammations and hypertrophies, and numerous abnormal conditions arising therefrom.

Unless these deformities and irregularities can be removed or corrected, catarrh remains an incurable disease, and the practise of rhinology a reproach to the specialist engaged in that particular branch of the healing art.

The nasal septum is composed of three principal parts—the quadrangular cartilage anteriorly, the vomer posteriorly, and the vertical plate of the ethmoid above. In the early stages of development, these are all cartilaginous, but the last two gradually ossify. If there is not ample room for this growth, the most flexible part must bend, hence deflections are most common in the cartilage. Some parts may grow more rapidly than others, giving rise to spurs and ridges in the bony parts Not infrequently these also occur in the cartilage from hypertrophy, and in all parts from various accidents in early life when the structures are not firm and fully developed, and in later life from fractures, principally.

Various efforts have been made to overcome these deformities, especially such as are well marked, and until quite recent-

ly, with very poor success. The attempt to push over a deflected septum and hold it in place with pins and splints, almost always met with failure. Bosworth's operation of sawing off spurs and ridges gives great relief in many cases, but it does not correct deflections. The perforating and crushing operation of Asch, holding the replaced septum in place by means of splints, was a decided step in advance; but it is a very trying ordeal for the patient. The presence of the splint for three or four weeks is almost unbearable, and the results are far from satisfactory. The operation requires no skill, and is a sort of "hit or miss' procedure.

Much good work has been done in this line in recent years, and we now have an ideal operation in the submucous resection of the deflected parts, with the submucous removal of the spurs and ridges. I say the operation is ideal, and if perfectly performed, it is, and the results are perfect. But, unfortunately, it is not always possible to perform an operation perfectly in so narrow a field, and with the many conditions that may be present to add to the difficulty.

A simple deflection of the cartilage with a normally thick mucous membrane, is easily removed, so as to give a nearly perfect septum. If there is a deep furrow or sharp ridge on one side, with atrophied mucous membrane, it is a very difficult matter to elevate the membrane entire, and sometimes it is impossible.

My method of correcting septum deformities is, in general, as follows: I first remove the deflected cartilage and bony part, as far as possible, by the method of Ballenger, as described by him at the Scranton meeting of the State Medical Society.

I make an incision about one-fourth of an inch from the junction of the skin and mucous membrane, parallel with it, and about one-half inch in length, through the mucous membrane on the left side, down to the cartilage. Through this opening I elevate the membrane as far as possible in all directions, being careful not to perforate or tear it. I then make a button-hole incision through the catrilage, and this is the most

delicate part of the operation, as great care must be exercised not to go through the membrane on the opposite side. This can be avoided only by the sense of touch, and skill in this procedure can be acquired only by practice. If the membrane is perforated, a permanent perforation is sure to result. This is not a very serious matter so far as comfort in breathing is concerned, but it may result in a "whistling nose," and it greatly retards healing.

After the hole is made through the cartilage, the membrane on the right side is elevated through this opening in the same manner as on the other side. Then, with the Ballenger swivel knife, which is so constructed that the blade cuts in whatever direction it is pushed or pulled, the cartilage is excised entire. If there are bony deflections back of this, they are snipped away between the two layers of membrane by bone-cutting forceps.

We now have a perfectly flexible septum that can be pushed into proper position and easily held there by light gauze packing. As there is no elastic structure remaining to spring back into a wrong position, this packing can be removed in twelve to twenty-four hours. The operation is painless and bloodless under cocaine and adrenalin anaesthesia, and healing takes place very rapidly.

If there are any bony or cartilaginous ridges remaining, I saw them off later, after the method of Bosworth. I at first attempted to remove them submucously, which is the ideal method, but I always tore the membrane, and got a large perforation, and I have abandoned the submucous chisel for the saw, preferring to sacrifice a little mucous membrane on one side rather than leave a large hole in the septum.

To date, I have operated on thirty cases, with a fair proportion of perfect results, and with better results in all of them than I have heretofore been able to obtain by any other method. The plan is ideal, and as greater skill is acquired in its execution, more perfect results will be attained.

No catarrhal condition, and no condition resulting from it, can be permanently benefitted by treatment, where there is a

deformed septum. A cure may be expected where the deformity is perfectly corrected, and much benefit results even from a partial correction of existing abnormalities in shape and structure.

After-treatment, often for weeks or months, is necessary for a cure. The resulting comfort from free breathing, and the general benefit from an abundant supply of pure air to the lungs, is well worth the discomfort of the operation, and the time and patience necessary for after-treatment.

I will report one case, the fifth of my series, operated upon January 1, 1906. This patient was treated by Dr. Taylor and myself, twelve or fourteen years ago, by sprays and cautery to the tubinates, with temporary relief. Since that time he had undergone treatment at the hands of other specialists. when he was sent to me by Dr. Taylor, in December, he stated that his condition was unbearable, and something must be done. He had a general hypertrophic catarrh, with a simple curvature of the septal cartilage to the right, a thick septum and thick mucous membrane. The right side of his nose was constantly impervious to air, and the left in the same condition a great deal of time. He had frequent colds in the head, and much head-ache resulting from the blocking of the nose.

I removed the septal cartilage and straightened the septum, and succeeded in giving him good breathing space on both sides. There is a small perforation, but this gives no trouble. I saw him a short time ago. He is somewhat given to exaggeration, and this is his statement to me: "I am a million times better than before the operation." He is now perfectly comfortable, and has absolutely no trouble from his nose.

I have not quoted any literature on this subject, but will refer any who are interested to the various articles, especially of Killan, Freer and Ballenger. A very complete paper by the latter may be found in a recent number of the *Pennsylvania Medical Journal.*

A CASE OF PSEUDO HERMAPHRODITISM. ALSO A CASE OF RUPTURE OF THE BLADDER AND ONE OF FRACTURE OF THE FEMUR.

BY DR. S. M. WOLFE, WILKES-BARRE, PA.

READ NOVEMBER 21, 1906.

I have two interesting cases to report this evening. The first is one of hermaphroditism, or strictly speaking, I suppose, pseudo hermaphroditism. Dorland defines the term of hermaphroditism as double or doubtful sex; the existence in the same individual of the internal and external organs of both sexes. Montgomery says that this condition has never been demonstrated in the human subject, although several cases have been reported. I suppose, therefore, that pseudo hermaphroditism would be the correct term to apply to the case I have to present to you.

The case was referred to me by Dr. Stiff of Plymouth, and presents the following history: Miss or Mr. Esther R., aged 20; father died of heart trouble and dropsy; mother aged 49, healthy. Patient has two brothers and four sisters, whose ages range from 23 to 12 years; all healthy; one sister married and and has a four-weeks old baby; other sisters have normal menstruations.

Patient has always been well, but has consulted a number of physicians on account of never having menstruated. She has also been fitted with a truss for what was supposed to be a double-sided, incomplete, inguinal hernia. The hernia of right side, she says, came on after a fall from a tree when she was ten years of age, and the other side appeared without an apparent cause two months later. She could always push the herniae back without much trouble, but they were extremely sensitive to the touch. Has worn the truss for past two years.

In appearance the patient is a decided blonde; general features are quite feminine; hands would pass for either sex; breasts developed more than a boy of twenty. but much below the average girl. No sign of beard, neither is there hair on the parts that are usually supplied (excepting the scalp).

The hips and pelvis resemble the female; the external genital organs are decidedly feminine. On closer inspection some abnormalities are found; the clitoris is somewhat larger than usual—about three-fourths inch in length and perhaps two or three times its normal thickness. The labiae major and minor seem normal, the latter forming a sort of prepuce which can be drawn out over the clitoris. The hymen is found to be imperforate, entirely closing what would be the entrance to the vagina.

The uthera is that of the female, but opens much lower than normal. After incising the hymen the finger passed readily to a distance of one inch and then met with resistance; this however, was not considerable, and I was able to easily pass two fingers upward to a distance equal to that of the normal vagina. I was, however, unable to locate either uterus or ovaries; the vagina has no mucus lining and seems to be simply a space crowded through between the bladder and rectum.

On November thirteenth I decided to operate on the supposed herniae, suspecting that they were undescended testicles, which, in fact, they proved to be. They were completely developed and lay in sacs inside the internal ring on either side. At this time we had an excellent opportunity for exploring the interior of the pelvis, and found complete absence of uterus and ovaries.

Intellectually the patient is perhaps nearly what you would expect from one brought up in the way she has been. So far as I can determine, she has no sexual instinct. Dr. Gilligan has assisted me in both operations on this case, and he has also very kindly made photographs which you may see.

Case two is that of B. B., aged 65. On the night of November 7 he was celebrating the result of election, and drank beer rather excessively. His bladder evidently became very considerably distended, but his mental faculties were rather hazy and he neglected the call of nature for several hours. Finally, however, he arose and went to the lavatory, and it somehow happened that the floor refused to hold still, and he fell. He was taken home in a condition of shock, and Dr. Sheridan

was called to attend him. Very little history could be obtained, however. There were no external evidences of injury, and in his alcoholic state a diagnosis of his condition was practically out of the question.

Several hours afterward Dr. Sheridan passed a catheter and found the bladder contained no urine, but considerable blood came through the catheter. He promptly made a diagnosis of ruptured bladder, and had the case removed to the hospital.

I saw him there, together with Doctors Sheridan and Gilligan, November 8, at 9 P. M. He was in a condition of considerable shock and the abdomen was much distended, but dull to percussion. We operated immediately, opening the cavity. There was an enormous quantity of clotted blood and urine escaped, and when we were able to get hold of the bladder, we found a ragged tear in the apex that would readily admit three fingers. Believing that we would fail to get primary union in the bladder tear, which was then nearly twenty-four hours old, and as the patient's condition demanded rapid work, we drew the wound in bladder-wall upwards, and stitched it securely into the lower part of abdominal incision, just the same as we anchor an incised gall bladder, leaving a rubber drainage tube in opening and a rubber catheter in bladder. The general peritoneal cavity was thoroughly flushed and closed without drainage. Patient is making a good recovery.

Case reported October 24. A fracture of upper third of thigh occurring August 17. Treated by sand bags and extension. The member was carefully measured at frequent intervals during the first three weeks. September 6 twenty-three days after the injury, the leg was measured and proved to be correct. Two days later there was a lengthening of over two inches; the heel of the sound leg coming only to the ankle of the injured one. The difference was so great that it could readily be seen across the room. Then, too, as soon as the extension was removed, the part would assume a position of complete eversion. I examined the site of fracture, and believed there was solid bony union, and later developments

proved that this was so. The extension apparatus was removed and a block attached to the foot-board of the bed on either side of the foot to hold it in position, and the patient instructed to make gentle pressure against foot board. After this, a gradual shortening continued until at the end of three weeks the legs seemed to be exactly of a length.

I believe in this case there was an unusual lengthening of the ligaments of the hip joint, and then, when the broken fragments of bone became united, these ligaments were drawn upon to such an extent as to cause this extra lengthening. This idea seems to be borne out by the after developments of the case and its progress to a complete and perfect recovery.

We have been taught that a slight amount of shortening is not at all unusual in fractures of the thigh, and it seems to me that the above case may enlighten us somewhat in the matter. Don't we have in many cases the same condition in a much less degree than I had in my case? In other words, wasn't my case an exaggerated condition of what we have in many cases of fractures of the thigh? Might we not have a relaxed condition of the ligaments of the hip joint in most of our cases where we have an ultimate shortening, and while our measurements indicate the correct length while the patient is in bed and the leg extended, may not the after contraction of these ligaments cause the shortening that so often occurs? Personally I am convinced that this is the case, and while it may be difficult to figure accurately on the correction of this difficulty, I think it is well worth bearing in mind.

TYPHOID FEVER CASES.

BY DR. A. A. BARTON, PLAINS, PA.

READ NOVEMBER 21, 1906.

I will endeavor to give you, in as brief a manner as possible, a record of twenty-four cases of typhoid fever treated by me during the last eighteen months. In this series of cases there have been some peculiar points that I wish to present, that I think will be of interest. In the one family that four cases occurred in, one case ran thirty-five days, two twenty-eight and one fourteen. With the one of the thirty-five days there was no remission at any time that would lead you to think there had been a relapse. The case that ran the fourteen days was the last to be attacked and could not possibly have been overlooked. This case ran a rapid course, the temperature was high at the onset, 104° to 105°, with active delirium and high pulse, rose-colored spots appeared on the seventh day of the disease. On the fourteenth day the temperature was normal and remained so, making an uninterrupted recovery. The other case in this family was also peculiar, in that there was little or no delirium until the temperature reached the normal point, when a low muttering delirium set up that lasted for one week.

I also had one case that developed a crop of boils after convalescence set in, these were found mostly over the back and nates. I counted fifty-eight at one time on the back alone.

One other case that I deem worthy of mention, was one that had a very severe attack of fever, in which pneumonia set in about the end of the third week, the pneumonia lasting eight days, when convalescence occurred and continued for one week, when the patient was taken suddenly with sore throat, accompanied with high fever and severe pain in the throat and ears. In a few hours after I found there was membrane on the fauces, and recommended the administration of anti-toxine before giving the anti-toxine the family requested counsel, which was had, confirming my diagnosis, and also the administration of the anti-toxine. This case made a very good recovery in a few days, with no sequels.

In the treatment of these cases I have followed no definite rule, but varied my treatment according to the different manifestations of each individual case. We have no routine treatment for this disease, yet there are certain rules we should follow. The one essential thing is that our patient have absolute rest, and that he be placed in a well ventilated room, attended by a competent nurse. Milk is the ideal food in this disease and should be modified to suit the case. The stool should be carefully watched for curds, and when present, the amount of milk should be lessened. The addition of lime water is often of service. Sometimes by peptonizing the milk it is made to agree with the patient. Broths may be given occasionally, but should always be strained.

During convalescence I still make milk the chief food, all other foods I find attended with risk for sometime after a normal temperature has been established. Finally a gradual return to the accustomed diet is made. I also find water in these cases of great benefit, especially where the kidneys are not acting properly and where the urine is irritating; the administration of some of the alkaline waters is of benefit. The temperature is always best controlled by sponging and the ice cap. The diarrhoea, if troublesome, is lessened by some form of bismuth or controlled by the careful use of opium.

Constipation is best overcome by enemas or glycerine suppositories.

At the onset of this disease I give small doses of calomel, frequently repeated until its effect upon the bowels is produced, followed by a saline. After which I begin the administration of equal parts of oil of eucalytus and olive oil, best given in soft capsules. This I give every two hours and continue throughout the disease. I believe it is due to this method of treatment, together with careful watching and diet, that I have had no hemorrhages or perforations in any of my cases, and so little tympanites.

I was able to trace the origin of contagion in twelve of the cases at upper Plains to a spring that these three families had been using water from. In regard to the others I failed to find how they contracted the disease.

REPORT OF TWO SURGICAL CASES.

BY DR. A. TRAPOLD, WILKES-BARRE, PA.

READ DECEMBER 5, 1906.

FRACTURE OF BOTH ARMS.

I have been asked to report a few cases before you this evening, but as my notice has been rather short, and the time for preparation limited, this report will, of necessity, be brief and I fear somewhat crude.

The first case which I wish to bring to your attention is that of a boy, Sylvester Kirwalevege, about fourteen years of age, and a slate-picker. On January 20, 1906, while working at the breaker, his coat became fastened on a pin of the machinery, and he was whirled around the axle. Besides some minor injuries he sustained compound fractures of both arms. I was called to see him four days after the injury, and after another physician had told his mother that only amputation of his left arm would save the patient's life. On examination I found the temperature 102° and the pulse 120. The left arm had a large longitudinal wound on the outer side near the shoulder joint. There was severe infection of this wound, and on examining the bone, I found a fracture of the neck of the humerus just at its junction with the shaft. The fracture was oblique, the lower fragment protruded through the wound and it was absolutely impossible to keep the parts in apposition. The right arm was broken at about its middle, and besides, had a transverse wound extending over half way around that member. The brachial artery had evidently been injured, shown by the absence of radial pulsation.

As stated above, both wounds were badly infected, so that our first efforts were directed against this without special treatment of the fractures, except light splints to keep the parts at rest. Under frequent irrigations and antiseptic dressings, the infection of the left arm yielded readily, while that of the right arm proved much more stubborn, the pus burrowing along the sheathes of the muscles, necessitating six or eight counter openings before we finally got control of the morbid process. In about four weeks the wound was in fairly good

condition, and after freshening the ends of the bones, I wired them together with copper wire. The operation presented no special difficulty. The wounds were left open and packed with gauze, and the arms put in splints. There was considerable discharge of pus and the packing had to be removed every few days and the wound irrigated. The right arm was especially troublesome, the pus burrowing in all directions.

About April first, two months after the injury, there was quite firm union of the left arm, but as the wound refused to heal and the discharge, though greatly lessened, was still troublesome, the copper wire, as the possible source of the irritation, was removed. But even after this the wound failed to close, and there was still a slight discharge. A careful examination showed the presence of dead bone, and about three months after the injury the wound was enlarged, a large sequestrum removed and the bone cavity thoroughly curretted, after which the discharge ceased and the wound healed without further trouble.

The healing of the right arm was much slower. For about two months there was absolutely no attempt at union of the fracture. The wire here seemed to act as an irritant and do harm. It was, therefore, removed. After this the discharge greatly lessened, the bone finally united, and after the discharge of a few spiculae of bone, the wound closed. At present the boy is working. He has perfect motion in his left arm. Extention and flexion of his right arm are less than normal, but not enough less to give any trouble.

Gentlemen, I have brought this case before you, not with the idea of showing you something new or claiming any special credit. My sole object is to demonstrate what good results we can get in apparently hopeless cases of fracture, especially in the young, by simply meeting the complications as they arise and giving nature a chance to perform a cure. The sacrifice of a limb is always a serious matter, and very much so to the poor, who depend on manual labor for their support. We should use all means at our command before lowering a man's earning power and throwing him, so as to say, on the charity of the public.

A CASE OF GALL STONES WITH CHOLECYSTECTOMY.

The second case I wish to report is that of Sister B., age 60, German descent and a teacher by profession. For the last ten years she has had occasional attacks of severe abdominal colic, accompanied by vomiting and constipation, with tenderness in the region of the appendix. The attacks were at first slight, came on every few months, lasting several days. But gradually they became more severe and prolonged. In the interval she was comparatively well and free from pain. Her physicians pronounced the disease catarrhal appendicitis.

The last attack occurred November 16, and was very severe, with intense abdominal pains, fever, vomiting and constipation. She was treated in the usual way by ice bags in the region of the appendix, and purgatives. Within a week she was very much better and sent to me for operation.

On examination, I found her general condition good, temperature normal, pulse 72. Tenderness in the region of the appendix very slight, but very marked over the liver and gall bladder, which led me to suspect gall stones, although the patient never had jaundice, and the location of the pain during the acute attacks pointed to appendicitis.

There being some doubt regarding the diagnosis, it was decided to remove the appendix, examine the gall bladder at the same time and be guided in our further procedures by the conditions present. The operation was performed on November 27. The usual incision for appendectomy being made, the appendix was easily found and removed. The region of the liver was then examined, and the gall bladder located. It was surrounded by adhesions and completely filled by a large stone. The first wound was closed and a second incision made over the gall bladder. The gall bladder was completely surrounded by omentum and adherent to it. On loosening the adhesions, which were not very firm, its walls were seen to be thickened and very much congested, especially near the fundus. Here were also several necrotic spots and at one place bile escaped. There had evidently been a perforation, and this had been walled off by the omentum. The gall bladder was re-

moved in the usual manner, a small gauze drain placed over the cystic duct and the wound partially closed.

The patient is making a very rapid recovery. Her temperature was never over 100° and her pulse 90. Three days after the operation her temperature became normal and has remained so since. Her appetite is good, bowels regular, and in fact she feels well in every way.

Gentlemen, the points of interest in this case are the total absence of symptoms pointing to the gall bladder as the seat of the disease, and that during the acute attacks the most intense pain should have been felt over the region of the appendix, when that organ was normal, or nearly so.

The diagnosis of gall stones is not always easy and can only be arrived at by careful weighing of all the symptoms. Now, a few words regarding cholecystectomy, or removal of the gall bladder. My experience of a few cases that I have had would lead me to the belief that patients, after this operation, make a speedier and more satisfactory recovery than when the stone is simply removed and the gall bladder drained. Of course, before doing a cholecystectomy, we must be sure that there is no obstruction in the common duct. If we are unable to do this, either on account of numerous adhesions, deep seat of the duct, or the condition of the patient cholecystotemy is properly indicated. While, where the gall bladder is gangrenous or the mucous membrane ulcerated, its walls thickened, the cystic duct impervious either by stricture or a stone impacted in same, cholecystectomy is the operation to be performed. But not in all cases are the indications as plain as here outlined. And there is always a natural hesitation of sacrificing any organ of the body, nevertheless most authorities have enlarged their indication for removal of the gall bladder so that it is done with much greater frequency than formerly. And the results certainly seem to justify this more radical procedure.

REPORT OF SEVERAL INTERESTING OBSTETRICAL CASES.

BY DR. DELBERT BARNEY, WILKES-BARRE, PA.

READ DECEMBER 5, 1906.

The first case in this little series which I wish to report is of interest only in regard to the pitiable deformity of the child. The parents are young and healthy and as perfect physically as we generally see. They have two children—a boy of five and a girl of three—who are also perfectly normal. The third pregnancy progressed without incident, and a female child was born at term on September 5, after a comparatively easy labor. The baby weighed about six pounds, and was strong and lusty, but it had a soft open tumor over the spine, well down in the lumbar region, and both feet were clubbed—turned completely in as if folded over each other. There was also considerable shortening of the legs from the knees to the feet. The spinal tumor was originally a membranous sack which had burst either before or during labor, and for many days a serous fluid drained from it.

I gave a gloomy prognosis in regard to the life of the child, and, indeed, we all hoped that my prophecy would be fulfilled. I assured them that infection of that open tumor was bound to follow, and that death would soon result. In the meantime I tried to bring the walls of the spina bifida together with adhesive strips and thus stop the drainage. As soon as this was done, the child cried lustily and its little uterus became prolapsed nearly one-third of its bulk. I then removed the adhesive strips and placed others around the battocks after replacing the womb, hoping thus to prevent the prolapse. This was ineffectual, and the case looked more gloomy than ever, and I instructed the caretaker to keep the child as clean as possible and await developments.

In the meantime Nature has taken up the case and is doing very well with it. The child has grown rapidly, is plump and fat and healthy. The spinal tumor is now completely closed, and its walls are fleshy, hard and firm, and seems to have

shrunken considerably. The prolapsed uterus has gone back entirely out of sight. There remains now the talipes, which may be remedied in the usual way when the time comes, and the shortening of the legs which cannot be greatly influenced.

Case II exhibits several elements of luck. Mrs. A. S. is a Lithuanian woman, whom I have attended off and on for several years. She lives in a lane on Brewery Hill, and on the afternoon of November 28 she was down town shopping. She walked home and had just nicely gotten there when the membranes ruptured and labor began. Mr. A. S. came home from work about six-thirty, ate his supper, and then telephoned for me. When I arrived the contractions were frequent and moderately severe, and examination revealed the os fairly well dilated. The child was lying transversely in the womb and the left elbow was presenting. The child was small, the pelvis roomy and the uterine walls acting well. Everything favored version. I explained the situation, got their consent, chloroformed the patient and quickly turned and delivered a living child. So far the case has done well, in spite of the fact that when I visited the patient the next morning, I found her finishing the leg of a stewed chicken. It was Thanksgiving Day, so no objections were raised.

Case III. Mrs. C. went through three normal pregnancies and has three very lively boys to show for it. Four years ago she suffered considerable pain and nervousness from an eroded cervix. A peculiarity of her pain was that it was either in her back or in the top of her head. When it left one place it appeared at the other. An operation on the cervix cured this condition, and she remained in good health, menstruating regularly, until the beginning of the year. In February she flowed irregularly, and with great pain, all through the month, having a rest of only a day or two at a time. Sometime in March she had a very severe hemorrhage, losing as much blood as would have sufficed for an ordinary confinement. This was followed for many days by a discharge of blood clots and shreds. From the beginning and throughout the whole course the pain and distress grew progressively worse. The abdomen, particularly

in the region of the uterus, was exquisitely tender. Walking was well nigh impossible, and even sitting still was torture.

On March 20, Dr. Guthrie saw the case in consultation, and said at once, and confidently, that it was normal pregnancy, complicated by an irritable condition of the uterus. Time proved that he was right; but considering the pain and soreness, the hemorrhage and subsequent discharges, I remained skeptical until foetal movements were actually felt.

Through the month of April there were at times little gushes of blood, at other times a watery flow. In June, July and a part of August, the flow continued at intervals, but was slighter and consisted of a dirty brownish watery fluid. September was free from those distressing phenomena and the patent began to gain in flesh and strength. On October 6, her little girl was born. Labor was perfect. From the beginning to the end it progressed without a pause and the subsequent history was uneventful. During all these dark and gloomy days there was one thing which worked for the good of the patient, and was the fact that she had a good appetite and could eat.

Case IV. Four years ago Mrs. J. C., aged thirty-two, and the mother of seven children, underwent an operation for ventro-fixation. The operation was successful, but she was warned at the time she left the hospital that if she should become pregnant again trouble might be expected. The warning had no effect and two years ago, with the help of a midwife, the eighth child entered the family. Some time in September of this year I was called and engaged to attend Mrs. C. in her ninth confinement, the time of which was fixed for October 25. After many false alarms, during the four weeks which followed that date, I was amused to get this message over the telephone, in a young girl's voice: "Please come up to Mrs. C.'s at once; and mamma says there will not be any fooling this time." There was not; a small male child was born on the morning of November 29. The birth was normal, and would have been spontaneous if the patient's strength had held out. As it was I had to assist her with the forceps.

The interesting question arises as to whether ventro-fixation

or any other similar operation is ever justifiable in a woman as young as my patient was. She came out of the ordeal very well, compared with many such cases, but during the last four months her life has been one of constant misery. Pain seldom left her; a dragging, sickening pain in the groins, pain in the back almost continual headache, nausea, vomiting, diarrhoea, dropsy, painful micturition and insomnia were some of the symptoms of which she complained. It is no wonder she became thoroughly discouraged and was finally in such a frame of mind that she would have welcomed any change which would have offered relief, even death itself.

REPORT OF CONTEST OF FIRST AID CORPS OF LUZERNE AND LACKAWANNA COUNTIES.

BY DR. JAMES W. GEIST, WILKES-BARRE, PA.

READ DECEMBER 5, 1906.

I think we will all agree that the men who go down into the mines are in greater danger of life and limb than are the soldiers and sailors of our army and navy, and that the need of an intelligent first aid for the miner is of equal importance with that of the army.

We are still looking to the future for that great day when swords and spears shall be turned into the plowshares and pruning hooks; but that the day for applying the first aid wisdom acquired on the battle fields to the hazardous occupations of civil life has arrived, was evidenced by a unique contest recently held in the Armory at Scranton.

About a year ago the Pennsylvania Coal Company and the Hillside Coal and Iron Company employed Dr. M. J. Shields to organize and instruct "First Aid" corps at each of the thirty-six mines operated by these companies; each corps to consist of a captain and four men and several substitutes.

At a preliminary contest eight teams were selected to compete in a final, which was held in the twenty-fourth of November, and to which I was invited by General Manager W. A. May, to act as one of the judges.

The work done by these men from the mines was certainly fine. Their knowledge and ability to give the "First Aid" needed in the various accidents happening daily to some of their brother miners was remarkable.

The following events were selected and done once by each of the eight teams:

First. One man to pick up a man insensible from gas, to carry him fifty feet to good air and perform artificial respiration for one minute.

Second. A man injured in the lower part of the body. Two men to form the four-handed seat and carry him fifty feet.

Third. A man with a broken leg. Three men to splint the leg with a mine sprag and some hay, make a temporary stretcher out of two green poles and two coats and carry him fifty feet. This was done by one of the teams in two minutes and forty-three seconds.

Fourth. A man with a scalp wound; one man to open the "First Aid" packet and dress the wound. This event showed that the men understood the importance of not touching the wound or the aseptic compress. It was done by one of the performers in one minute and forty-two seconds. While this man's method differed from that of the others, it was the unanimous opinion of the judges that it had been effectively, neatly and quickly done.

Fifth. Five performers. A man with a fracture of the right arm and a wound of the left leg above the ankle; to do artificial respiration for one minute, dress the fracture and the wound, place him on a litter, and carry him fifty feet over a loaded coal car and a fence, and load him into the ambulance.

Sixth. Five performers. A man with a fracture of the right thigh and of the leg; to place and secure long splints, load on litter and carry over loaded coal car, having an overhead obstruction reaching to within about two and one-half feet of the top coal and over a fence.

I cannot make any comment to this body of medical men

upon the different methods of doing artificial respiration or splinting or bandaging. I can only say it was all well done.

Of course the proficiency of a team depended largely upon the intelligence and aptitude of the captain commanding it, the best teams doing and moving with a one, two, three snap of military precision; yet, the work of the poorest is a great step in advance of an almost total neglect or indifference, or "Don't-know-what-to-do-- spirit that was prevalent in some mines not so very many years ago. Taking it all in all, the contest had an educational value and should be repeated annually.

CASES OF PULMONARY STENOSIS.

BY DR. C. P. STACKHOUSE, WILKES-BARRE, PA.

READ DECEMBER 15, 1906.

Mr. President and Members of the Luzerne County Medical Society:—

It had been my intention to present to you, at this time an entirely different subject, but I was unable to complete the research necessary for its proper presentation, and at a very late date decided to give a short review of pulmonary stenosis and report a case in which the physical signs and symptoms were those of this disease.

The material for the paper was taken largely from Babcock.

Pulmonary stenosis is a rare congenital, or more rarely acquired, narrowing of the pulmonary orifice. Babcock refers to Constantin Paul's elaborate monograph, published in 1871, and says that since that time only ten cases have been reported, one of which is his own. I regret that I have not had access to Paul's monograph.

Morbid Anatomy.—In the cases above alluded to.

No. 1. Age, nineteen; cause, articular rheumatism at eleven. Autopsy, numerous vegetations attached to the pulmonary valve and along the wall of the artery, recent endocarditis and right ventricular hypertrophy.

No. 2. Age, fourteen; cause, congenital; at eleven had some pulmonary disease and endocarditis. Autopsy shows cauliflower vegetations attached to walls of conus arteriosis and to valves. Right ventricule hypertrophied and dilated.

No. 3. Age, thirty-four; cause, acute rheumatism; valves thickened; right ventricle not enlarged.

No. 4. Age, forty-three; cause, leukemia; no necrosis of valves nor micro-organisms.

No. 5. Age, nineteen; cause, rheumatism at four; pulmonary artery dilated, no congenital defects.

No. 6. Age, nineteen; cause, not given in report; pulmonary valves fused into an inflexible diaphragm with an opening one-tenth of an inch in diameter.

No. 7. Age, twenty-four; cause, not given in report; inflammatory blending of pulmonary segments into a tendon-like cone projecting into the lumen of the artery. There was an opening at its apex two m.m. wide. Right ventricle enormously hypertrophied.

No. 8. Age, twenty-one; cause, rheumatism one year before. Polypoid vegetations springing from the wall of the pulmonary artery, preventing complete opening of the valve—same condition found in the aorta.

In the congenital form the obstruction is due usually to a fusing together of the valve segments forming either a diaphram across the opening or a cone-like projection into the artery with a small opening at its apex. The foramen ovale is usually open, the inter-ventricular septum sometimes incomplete. The pulmonary artery is always narrow. The ductus arteriosis is generally open.

In the acquired form there is usually evidence of recent endo-carditis, dilatation or, at least, no narrowing of the pulmonary artery and absence of congenital deformities. In both there is hypertrophy and often dilatation of the right ventricle.

Etiology.—The congenital form is caused by (1) intra uterine endo carditis or myocarditis, (2) defective development.

Acquired cases are due to endocarditis, caused by rheu-

matism or other infectious disease. It is rare because the right heart is seldom the seat of acute inflammation.

One case was caused by gumma.

PHYSICAL SIGNS.

Inspection.—Cyanosis is generally but not always present in congenital cases, and when present is not uniform throughout the body. It is most apparent in the cheeks, ears, fingers, elbows, and knees, and is intensified by coughing or physical exertion.

In the acquired form, there is more frequently pallor of countenance, though there may be turgescence of superficial veins. There is usually bulging of precordium over the right ventricle (lower sternum) due to hypertrophy of right ventricle. Pulsation in the epigastrium is common.

Palpation confirms inspection, and in addition, shows a systolic purring thrill in pulmonary area, second left interspace near sternum; this may be exceedingly delicate or distinct and harsh. The pulse is small, feeble and rapid.

Percussion shows increased absolute and relative cardiac dullness—down and to the right over the right heart.

Auscultation reveals a systolic murmur in the pulmonary area heard most distinctly in the second left interspace, decreasing in intensity as it approaches the apex, transmitted upward and to the left towards the clavicle. Not heard in the cervical arteries (differentiating from aortic stenosis).

If intense, the murmur may be heard throughout the precordium, its area of maximum intensity corresponding with the location of the systolic thrill.

The pulmonic second sound is faint or absent while the two aortic sounds are distinct.

Symptoms.—When the disease is congenital, the patients are usually weakly, undersized, sometimes mentally deficient and are generally cyanotic. Usually there is dyspnea and the common evidences of cardiac asthenia.

The acquired cases resemble those of other valvular cardiac

diseases. There is a tendency toward consumption which is frequently the terminal event.

Diagnosis.—The condition must be differentiated from aortic stenosis, and from accidental or haemic murmurs, the chief points to bear in mind being:

1. Murmur in the second left interspace transmitted toward left clavicle, decreasing in intensity toward apex.
2. Bruit in the second left interspace.
3. Hypertrophy of right heart.
4. Pulse small and rapid.

In accidental murmurs, of which the most common is the haemic murmur, there is generally an anemic, neurotic or chlorotic history or disturbance of the sympathetic nervous system by pelvic or digestive disorders. They are systolic in time and have a soft, blowing or flowing quality of high pitch. No change in the size of the heart and no circulatory disturbance is present and the murmur is not transmitted but quite circumscribed. They diminish or disappear by changing position or by respiratory movements.

In aortic stenosis there is hypertrophy of the left ventricle, a harsh murmur in the second right interspace, heard in carotids. If transmitted, it is across the sternum to the third interspace. The pulse is small and slow.

The *prognosis* is not favorable to prolonged life and very few pass the third decade. They have a special predilection towards tuberculosis, and when that occurs the process cannot be stopped, owing to anemia of the lungs caused by the stenosed valve.

Mode and cause of death.—Of the ten cases recorded since 1871, one dies of nephritis; one of heart weakness; one of miliary tuberculosis; five of phthisis; of two, the cause of death is not mentioned in the material at hand.

Before reporting my case, I wish to say that every case of this kind rests upon autopsy for final diagnosis. I simply report the case as I saw it, and the conclusions reached after my study of it.

REPORT OF CASE.

Mrs. M. S., white, housewife, fifty-three years of age, born in Wilkes-Barre, married, five children.

The family history is interesting. The maternal grandfather, mother, two aunts, three uncles and one brother, all died of apoplexy. One uncle and two sisters have had one or more strokes of apoplexy.

Medical history.—Patient was always well until her second childbirth, January, 1882. Labor was normal and there is no history of infection, but weakness, amounting almost to prostration followed the birth until in May, 1882, four months after, while at work in her home, she was without warning stricken with aphasia, followed by partial paralysis of the entire left side. She was a long time recovering from this, but the only evidence now present is slight trouble in walking and almost unnoticeable ptosis of the left eyelid. Some dyspnea and vertigo has been present, following exertion, since that time, as well as frequent severe headaches.

In April, 1904, she had a slight attack of grippe, followed in June of the same year by a moderately severe attack of rheumatism, which lasted about two weeks, reappearing at intervals for four or five months.

On April 2, 1905, I was hurriedly summoned to her bedside and found her sitting propped up on the edge of the bed, spitting or vomiting quantities of a bright, bloodstained, frothy fluid slime, intensely cyanotic, and suffering from extreme dyspnea, and pain in the precordium. The pulse was small, very rapid, and weak.

The attack was a picture of acute cardiac dilatation and responded promptly to the hypodermic use of tincture digitalis and strychnine.

She exhibited remarkable recuperative power, however, and the third day I found her down stairs.

A second attack of this kind occurred three months later, July, 1905.

Unfortunately, my notes of these attacks have been mislaid

and I am forced to depend upon memory and the notes of the following or third attack for this report.

The history of the onset is practically the same in all of the attacks.

Present attack, after a hard day's work, began with a feeling of fullness and bloating in the epigastrium, a couple of hours before the attack. At first, she thought it was gas, but she did not seem to be able to raise any from the stomach. This fulness gradually ascended under the sternum and caused an ache or pain there, gradually rising with the fullness until the entire precordium was involved. This was quickly followed by cough, rapidly increasing dyspnea, nausea, vomiting of bloody froth, weakness, cold sweat, faintness and high running pulse, almost imperceptible in the wrists and later entirely absent. Her condition became rapidly worse, and as quickly as possible I opened a vein in the arm. As the vein was opened, she collapsed entirely and apparently ceased to breathe. I had been unable to get the radial pulse for some time, and I was on the point of telling her husband that she was dead, when she gave a short froth-clogged gasp. I hurriedly mopped the mouth and throat with muslin on a haemostat, and she gasped again. After several repetitions of this process, the respirations became more regular, deeper and stronger. While all this was going on, the blood was slowly flowing from the vein I had opened and, although the cardiac impulse was so weak, we were fortunate enough to secure twenty ounces or more of blood. This quickly relieved the instant pressure and gave an opportunity for the stimulants to take effect.

Physical signs. Inspection.—The apex beat is high and not very pronounced; the face, lips and entire upper portion of the body is cyanotic.

Palpation.—The apex beat is almost on a level with the left nipple (low in fourth interspace), and is nearer the sternum than normal, very rapid and weak. There is a thrill over the pulmonary area which begins in the second interspace to the left of the sternum and lessens in intensity as it approaches

the apex. It is not felt in the fourth interspace. Pulse weak and rapid.

Percussion.—The area of absolute dullness extends to about one inch to the right of the sternum; very little if any increase to the left.

Ascultation.—There is a systolic sawing or rough purring murmur in the pulmonic area, with the point of greatest intensity one and one-half inches from the sternal margin in the second interspace, pronounced also in the third interspace, fainter in the fourth interspace. Murmur is transmitted toward and along the clavicle. The apex beat in the fourth interspace is almost clear. Aortic sounds clear, carotid vessels give clear sounds.

A loud systolic murmur is also heard in the back, in the left inter-scapular region. Early in the attack the mitral sounds seemed faint but clear, but with return of compensation there developed a wide distributed systolic murmur, increasing in intensity with the establishment of compensation. At first, I though this was due to an accompanying mitral stenosis, but later, when compensation was completely re-established, the mitral sounds became clear again.

There have been two similar attacks since the one detailed—the last in March of this year (1906); both were of moderate severity and soon overcome.

At the present time, she is in comparatively good health; the headaches have entirely disappeared save an occasional one after exertion. Exertion also brings on dyspnea, and epigastric uneasiness, but this disappears soon if she lies down at once. There is now a high apex beat, under the fifth rib. A thrill in pulmonary area. Moderate enlargement of right heart. A murmur, best heard in the second left interspace, near the sternum, also in the third interspace, transmitted upward and outward toward the clavicle; heard in axilla, also. It is harsh and rasping in character, and appears to be systolic in rythm.

There is also a long systolic murmur heard most plainly in the back, in the left interscapular region, and heard around the lower cardiac area.

As before mentioned, I at first thought this due to an accompanying mitral stenosis, but as both apical sounds are clear and it is most intense in the back, I now believe it to be the result of a sclerotic condition of the intima of the aorta.

REPORT OF THE LIBRARY COMMITTEE.

READ DECEMBER 19, 1906.

Your Committee on Library respectfully report as follows: The new accessions of bound volumes to the library during the year just ending, number 511. Of these we received 186 volumes from the Library Exchange, a valuable portion of which was the *British Medical Journal* complete from 1884 to 1904. This was from the library of the late Dr. Fowler of Brooklyn.

As usual, the New York Academy of Medicine has been ever generous and have given us 106 volumes. We received 48 volumes from the Ontario Medical Society of Toronto, 23 from Medico-Chirugical Library of Baltimore, 13 from the University of Michigan, and 7 from Rev. Horace Hayden, and separate volumes from numerous other societies and libraries, including Rhode Island Medical Society, Bellevue Hospital, American Surgical Association, New Jersey State Board of Health, Pennsylvania State Board of Health, Marine Hospital Service, Pathological Society of Philadelphia, J. H. Kellog of Battle Creek, Pennsylvania State Society, Bristol Medical Society, England, American Laryngological Society, Phipps Institute, etc. Dr. Chas. McIntire has continued his interest during the year and has contributed numerous periodicals. From members of our own society we have received a large contribution from Dr. L. I. Shoemaker, of bound volumes of *American Journal of Medical Sciences,* and of *American Journal of Obstetrics,* which will be useful in exchanging with other libraries. We have also received valued contributions from Doctors Gibson, Guthrie, Long, Buckman, Clive Smith, Walter Davis, Wadhams, Johnson and Taylor. We have bought 14 new volumes during the year.

We have had the usual number of periodicals on file, due to the liberality of the Library Exchange, and to our own members. Our thanks are due and extended to all who have helped and if we have inadvertently omitted the names of any who

have contributed, the omission is unintentional and our thanks are extended just the same. The library has grown rapidly, and possibly beyond our expectations. When we began to accession our books we bought an accession book for 2000 volumes, thinking this would last us a long time. When this was finished we bought another of 2000, thinking 4000 volumes would be our limit. Our library now numbers 4005 bound volumes and numerous pamphlets, and "we are not dead yet."

Respectfully submitted,

L. H. Taylor,
Maris Gibson,
Committee.

LIST OF PERIODICALS AND WANT LIST OF THE LUZERNE COUNTY MEDICAL SOCIETY LIBRARY, JANUARY 1, 1907.

LEWIS H. TAYLOR, LIBRARIAN.

Albany Medical Annals. Vols. 21–27. Want all others.

Alumni Register. U. P. Want vols. 1, 2, 3, 4.

American Gynecolog. and Obstet. Journal, 1891. Vols. 3, 5 and 6. Want all others.

American Journal Med. Sciences, 1827. Complete.

American Journal of Obstetrics, 1869. Complete.

American Journal Syphilography and Dermatology, 1870–74. Ended. Complete.

American Medical Intelligencer, 1838. Want vols. 3, 1840; 4, 1841.

American Medical Monthly, 1854. Complete.

American Medical and Philosophical Register. Vols. 3 and 4.

American Medical Recorder, 1818. Vols. 1–7, 9–11, 13–15. Want all others.

American Medical Times, 1860. Complete.

American Medicine. Complete.

American Practitioner, 1870. Yandell & Parvin. Want vols. 31 and 32.

American Practitioner and News, 1886. Want all.

Annals of Anatomy and Surgery, 1878. Complete.

Annals of Surgery, 1885. Continuation of above. Want vols. 11, 1890; 12, 1891, Nos. 1, 2, 3, 4, 5; 13, 1891, Nos. 1, 2, 3, 4, 6; 17, No. 4, April, 1893; 20, No. 1, July, 1894; 28.

Annals of Ophthalmology and Otology. Complete.

Annals of Ophthalmology. Complete.

Annals of Otology. Complete.

Archives of Laryngology, 1880. Vol. 1. Want vols. 2, 3, 4.

Archives of Medicine (Seguin). Complete.

Archives für Gynecologie. Berlin, 1874. Want all after vol. 41, 1891.

Archives of Pediatrics, 1884. Want vols. 1, 2, 4, 7.

Baltimore Medical and Surgical Journal and Review, 1833. 1. Want vol. 2, 1834. Continued as North American Archives Medical and Surgical Science, 1, 2, 1834–35.

Berliner Klinische Wochenschrift, 1864. Want vols. 1–13, 1864–1876, and all after 33, 1896.

Boston Medical and Surgical Journal, 1828. Want vol. 43, and all after 1904.

Brain, London, 1878. Want 1–15 inclusive.

Braithwaite's Retrospect. Vols. 1–93.

British and Foreign Medical Reviews, 1836–1847. Complete.

British and Foreign Medico-Chirugical Review. Ended in 1877. Want vols. 46, 1870: 59, first half of 1877.

British Medical Journal, 1857. 1884–1904 complete. Want all others.

Brooklyn Medical Journal, 1888. Complete.

Bulletin American Academy Medicine. Want 1, 2, 3.

Bulletin of Association of Med. Librarians, 1901–02. Vol. 1. Complete.

Canadian Journal of Medical Science, 1876. Vols. 1–7 complete. Continued as Canadian Practitioner.

Canada Lancet. Vols. 3–17, 21–23. 31, 34. Want all others.

Canadian Practitioner, 1883. Began with vol. 8; vols. 8–30 inclusive.

Centralblatt für die Medicinische Wissenschaft. Berlin, 1863. Want vols. 1–30 inclusive; also 35, 1897; 40, 1902, inclusive, and all after vol. 41.

Cincinnati Lancet-Clinic, N. S. begin. Vol. 16, 1886. Cont. of Cincinnati Lancet and Clinic. Want vols. 1–43 inclusive.

Cleveland Journal of Medicine. Want vols. 1–4.

Cleveland Medical Journal, 1902. Complete.

Colorado Medicine. Vol. 1.

Compendiem of Medical Science, 1868. 1874–1888.

Dublin Journal Medical Sciences, 1832–1845. Want vols. 18, 1840; also 25–28, 1844–45. Continued as—

Dublin Quarterly Journal, etc., 1846–1876. Want vols. 22, 1856; also 24–30, 1857–1860; also 32–39 inclusive, 1861–1865. Continued as—

Dublin Journal Medical Sciences. Want vols. 55–62 inclusive, 1873–76; 75–80 inclusive, 1883; 82–87 inclusive; 89, 91–96, 98, and all after 104.

Detroit Review Medicine and Pharmacy, 1866–71. Vol. 9. Want all others.

Detroit Medical Journal, 1877. Vol. 1, N. S., 1901. Vols. 3–6. Want 1 and 2.

Edinburgh Medical and Surgical Journal, 1805–1855. Continued as Edinburgh Medical Journal, 1855. Want vols. 6, 1810; 20, 1823; 41, 1834; 43, 1835; 45–50 inclusive, 1836–38; 52, 1839; 53 and 54, 1840; also 2d half of 56, 1841–1855 inclusive; also 1856, March; 1858, 59 and 61, want all; 1862, January to June; 1863, February, March, April, May and June; 1864, July–December; 1865, September and October; 1867, July, August and September; 1868, September; 1875, May; 1880, February, April, July, November, December; 1885, all; also all after 1898.

Ephemeris of Mat. Med. Pharmacy and Therapeutics (Squibb), 1882. Vols. 1–3.

Fortschritte der Medicine, 1883. Vols. 5, 6, 7, 16 and 17. Want all others.

Half Yearly Abstract Medical Science, 1868–1872.

Index Medicus. Complete.
International Clinics, 1891. Want all of series 5, 6, 7, 8, 9; also vols. 1, 2 and 3 of series 10; vols. 2, 3 and 4 of series 11; vol. 2 of series 12.
International Medical Magazine, 1892. Vols. 1–12. Want all after 12.

Johns Hopkins Hospital Bulletin. Complete.
Journal of American Medical Association, 1883. Complete.
Journal of Cutaneous and Venereal Disease. Want vol. 15–May, October, November, December, and vol. 7.
Journal Gynecological Society, Boston, 1869. Vols. 1–7. Complete in seven volumes, ended.
Journal of Materia Medica, 1859. Want vol. 1; also 5–14 inclusive, and all after vol. 18.
Journal of Association of Military Surgeons. Want vols. 1–9.
Journal of Mental Pathology, 1901. Want vol. 1, and all after vol 7.
Journal of Mental and Nervous Disease. Want vols. 1 and 2; also 5–11 inclusive; 22 and 23, and all after 27, 1900.
Journal of Tuberculosis, 1899. Vols. 1–5. Want all after vol. 5.

Kansas City Med. Index Lancet, Vols. 21, 23, 24, 25, 26. Want all others.

Lancet, London, 1823. Want all 1895, 1896, 1897, and all after 1902.
Laryngoscope, 1896. Want vol. 6, 1899, No. 6; vol. 12, 1902, Nos. 8, 10, 11, 12.
Lehigh Valley Medical Magazine, 1889–1902. Complete. Ended.
London Medical Gazette, December, 1827–1851. In 1852 united with Medical Times to form Medical Times and Gazette. Want 1, 2, 5, 7, 11, 13, 15, 17–30 inclusive, and all after 30.
Louisville Medical News, 1876–1885. Want vols. 5 and 6, 1878; also 19 and 20, 1885.

Maryland Medical Journal, 1877. Want vol. 7, 1880, also vol. 9–31 inclusive; also 40.
Medical Annual (Treat). Want all proceedings 1889.
Medical Brief, 1873. Vols. 5–8.
Medical Bulletin, 1879. Vols. 3, 6 and 7.
Medico-Chirugical Review, N. S., London, 1825–1847 complete. Want 1st series vols. 1–3, 1820–1824.
Medical Chronicle, Manchester, England, 1884. Want vol. 6, April–September inclusive, 1887; vol. 8, April–September inclusive, 1888; vol. 9, October, 1888–March, 1889; vol. 21, October, 1894–March, 1895; vol. 22, April–September, 1895; vols. 21–30 inclusive, 1894–1899; vol. 34, April–September, 1901.
Medical Library and Historical Journal, 1903. Complete.
Medical Museum, Phila., 1805–1811. Complete.

Medical News—Cont. of Medical News and Library. Want vols. 1–9 of Medical News and Library.

Medical Press and Circular, London, 1866. Title of vol. 1, Dublin Medical Press and Circular. Want all preceding 1878, and all after 1888.

Medical Record, N. Y., 1866. Complete.

Medical Repository, Phila., 1797–1824. Want Hexade III, Nos. 1 and 2, 1811 of vol. 3, or whole No. vol. 15.

Medical and Surgical Monitor, 1898. Vols. 3–8. Want vols. 1 and 2, 1898 and 1899.

Medical and Surgical Reporter, N. S., 1858. Want vols. 64, 66, 67, 68, 70, 71.

Medical Times, Phila. Vols. 1–18. Want all after vol. 18, 1888.

Medical Times and Gazette. See London Medical Gazette.

Modern Medicine, Battle Creek. Want vols. 1–3, 5, 6, 11.

Monthly Journal of Medicine, 1823. Want vols. 2–6.

New England Journal of Medicine and Surgery, 1812–1827. Complete.

New England Medical Monthly, Bridgeport, 1881. Vols. 2, 4, 5, 6. Want vol. 1, Nos. 1 and 2; vol. 3, Nos. 2, 8, 9, 11, and all after 6.

New Orleans Medical and Surgical Journal, 1884. Want vol. 7, No. 3, November, 1850; vols. 8–25 inclusive, new series begun in 1873. Want vol. 5; vol. 10, No. 4, October, 1882; vol. 11, Nos. 4, 5, 7, 11, 12; October, November, 1883; January, February, May, June, 1884; vol. 12; vol. 14; vol. 15, Nos. 1, 2, 3, 4, July, A. S. O., 1887; vol. 16, Nos. 1, 3, 5, 7, 8, 9, 10, 11, September, November, 1888; J. F. M. A. M., 1888; vol. 18, Nos. 7, 9, 11; vol. 19, Nos. 2 and 3; August and September, 1891; and all after 19, except 49 and 50.

New Remedies, 1871. Want vol. 4, and all after 12, 1883.

New York Journal Med. and Collat. Science, 1843–1860. Complete.

New York Journal Gynecol. and Obs. 1891. Vol. 3. Want all others.

New York Journal Medicine and Surgery, 1839–1841. Complete.

New York Medical Journal (Quarterly), 1830–1831. Complete.

New York Medical Journal, 1865. Complete.

New York Medical and Physical Journal, 1822–1830. Want vol. 7, 1828.

New York Medical Times. Want vol. 3, 1854.

New York State Journal of Medicine, 1901. Vols. 1–5.

North American Archives of Medical and Surgical Science (cont. of Baltimore Medical and Surgical Journal), 1 and 2, 1834–'35. Complete.

North American Medical and Surgical Journal, 1826–1831. Complete.

Northwest Medicine, 1903. Vols. 1 and 2.

Obstetrical Journal of Great Britian and Ireland, 1873–1880. Complete.

Occidental Medical Times (cont. of Sacramento Medical Times). Want all except 3 and 17.

Ophthalmic Record, 1891. Vols. 2–15. Want vol. 1.

Pediatrics, 1895. Vols. 2–13. Want vol. 1, No. 7.

Pennsylvania Medical Journal. Complete.

Philadelphia Journal Medical and Physical Science, 1820–'27. Complete.

Philadelphia Medical Journal. Complete.

Philadelphia Medical Museum. Complete.

Philadelphia Medical and Physical Journal, 1804. Want all except 1 and 3.

Polyclinic Philadelphia, 1883. Vols. 1, 4, 5, 6. Want vol. 2, No. 1; vol. 3, No. 4.

Practitioner, London, 1868. Want vols. 11, 16, 21, 32–35, 38–51, and all after 52.

Progressive Medicine, 1901. Vols. 1–4.

Providence Medical Journal, 1900. Vols. 3–6. Want vols. 1 and 2.

Quarterly Journal of Psycholog. Med., 1867. Want all after vol. 6, 1872.

Railway Surgeon, 1894. Want vol. 6, 1899–1900.

Refractionist, Boston, 1894. Want all after vol. 3.

Revue des Sciences Medicales, 1873. Want vols. 1–30; 35, 36, 42, 44–51, and all after 52.

Saint Paul Medical Journal, 1899. Complete.

Sanitarian, April, 1872. Vols. 1–6. Want all after vol. 6, 1878.

Southern California Practitioner, 1885. Vols. 8–20. Want vols. 1–7, and all after 20.

Stethoscope and Virginia Medical Gazette, 1851–1855. Vols. 1, 2, 3. Title of 4 and 5 is Stethoscope alone. Continued January, 1856, as Virginia Medical Journal, q. v.

Therapeutic Gazette, Detroit, N. S., 1880. Want vols. 1, 2, 3, with title New Preparations; also vol. 17, 1901.

University Medical Magazine, 1888. Complete.

University of Penn'a Medical Bulletin. Complete. Successor of above.

Virginia Medical and Surgical Journal, 1853. In 1856 united with Stethoscope to form Virginia Medical Journal. Want vol. 7.

Virginia Medical Monthly, Richmond, 1874. Complete.

Virginia Medical Semi-Monthly. Complete.

Western Journal Medical and Physical Science (Drake). Title of vol. 1, 1827, was Western Medical and Physical Journal. Want vol. 1–3; also 10, 11, 12.

Western Journal of Medicine and Surgery, 1840–1855. Four series. Want vols. 3 and 4 of first series; vols. 2, 3, 4, 5, 6, second series; vols. 1, 2, 3, 4 of fourth series.

Western Journal of Medicine (Parvin), 1866–1869. Want vol. 1, called Cincinnatti Journal Medicine, 1866.

Western Lancet (Cincinnati), 1842–1857. Complete.

TRANSACTIONS.

Alumni of Bellvue Hospital, 1897, 1898–1899.
American Climatological Association. Vols. 2–19. Want vol. 1.
American Dermatological. Vols. 1900–1903.
American Gynecological Society. Want vols. 17, 21–24, 28, 29.
American Laryngological Association. Want 1, 2, 3 and 17.
American Larynogolog. Rhinolog. and Otolog. Want all except 7, 10, 11.
American Medical Association. Complete.
American Pedriatric Society. Vols. 2 and 3.
American Roentgen Ray Society, 1902–1904.
American Surgical Association. Want vol. 1; also 5–16 inclusive.
Associated Physicians Long Island. Vols. 3 and 4.
Association American Physicians. Vols. 1, 2, 3 and 6.

Clinical Society of London. Want 1–4 inclusive, 6, 7, 13, 14, 20, 21, 22.
College of Physicians and Surgeons, Phila. Third series. Complete.
College of Physicians (Kings and Queens) in Ireland. Vols. 1–4. Want vol. 5. Only 6 published.
Colorado State Medical Society. Vols. 25–27 and 30. Want all others.
Congress of American Physicians and Surgeons. Complete.

Homoepathic Medical Society State of New York. 1870.

International Medical Congress. 1876, 1881, 1887, 1891.

London Obstetric Society. Vols. 1–35. Want all after 1893.
Luzerne County Medical Society. Complete.

Massachusetts Medical Society, 1902–1903.
Medical Society State of California. Vol. 30.
Medical Society State of New York. Want 1838–'39, 1844–'46, 1853, 1856.
Medical Society State of Pennsylvania. Complete.
Medical Society State of Virginia, 1901, 1903.
Medico-Chirugical Trans., London, 1809–1890. Want vols. 68, 70, 71, 72, and all after 73, 1890.
Michigan State Medical Society, 1874–'80, 1882–'86, 1890–'91, 1894–'95.
Minnesota State Medical Society. Vols. 21, 23–31, 33, 34. Want all others.
Missouri State Medical Society, 1903.
Mississippi Valley. Vol. 3.

Nebraska State Medical Society, 1902.
New York State Medical Association. Complete.
New York Academy of Medicine. Second Series. Vols. 1–12.
New York Pathological Society Trans. 1–4; Proceedings, 1888–1900.
New York State Commission of Lunacy, 1890–1898 inclusive.
North Carolina Medical Society, 1898.

Ohio State Medical, 1889, 1891, 1901, 1902.

Pan American Medical Congress, 1898.
Philadelphia County Medical Society. Vols. 1, 2, 4 and 17.
Philadelphia Pathological Society Trans. Vol. 18; Proceedings, N. S. Vols. 1–7.

Royal Academy of Medicine in Ireland. Vol. 19.

Southern Surgical and Gynecological Transactions. Vols. 2, 4, 13, 14.

BOARDS OF HEALTH.

American Public Health Association. Vols. 1 and 4.
City of Chicago, 1892–1896, inclusive.
Massachusetts State. Vols. 2–11. Want all others.
New York City. Vols. 1–6 (71–75), 1890; 1895.
New York State. Vols. 5, 13, 15 and 17.
Pennsylvania State. Want 1885 and 1892.
State of New Jersey. 1899–1905 inclusive.

HOSPITALS.

Bellevue and Allied Hospitals. Vols. 1 and 4.
Boston City Hospital. Vols. 1, 2, 3, 6–14. Want 4 and 5.
Children's Hospital, Boston, 1869, 1894, 1895.
Dublin Hospital Reports, 1817. Vols. 1, 2, 3 and 5.
Guy's Hospital Reports, First Series, 1836–1842, 7 vols.; Third Series, 1853. Want 4 of First Series; all of Second Series; also 1–13, 16–18, 20, 23, 25, 28 of Third Series, and all after 29.
Johns Hopkins Hospital Reports. Want vol. 1.
London Hospital Clinical Lectures and Reports, 1864. Vols. 1–4.
Marine Hospital, 1873–'74–'75, 1887–'89, 1891–'93, 1897–1905 inclusive.
Mt. Sinai. Vol. 3.
Ophthalmic Hospital (London Royal). Vols. 1, 2, 4, 5, 7 and 9. Want all others.
Pennsylvania Hospital, Philadelphia. Vols. 1 and 2.
Philadelphia Hospital. Vol. 5.
Presbyterian Hospital, New York. Vols. 1–6.
St. Bartholomew's, London. Vols. 1–33; want after 33.
St. George's, London. Vols. 1 and 10.
St. Thomas, London. Vol. 1, 1836; New Series, 2–7, 11–14, 19. Want all others.

WILKES-BARRE MORTUARY RECORD,

FOR YEAR ENDING DECEMBRR 1, 1906, AS REPORTED TO CITY CLERK.

F. C. JOHNSON, M. D.

Cause of Death.	December, 1905	January, 1906	February	March	April	May	June	July	August	September	October	November	Totals, 1906	Totals, 1905	Totals, 1904	Totals, 1903	Totals, 1902	Totals, 1901	Totals, 1900	Totals, 1899	Totals, 1898	Totals, 1897
Accident	8	5	8	8	2	3	7	14	10	11	12	7	95	87	100	74	44	64	57	64	48	61
Appendicitis	1	—	—	1	—	—	—	1	—	2	—	1	6	5	6	5	6	4	1	3	6	2
Apoplexy	4	4	2	1	2	2	2	5	3	4	6	—	35	41	25	27	26	30	23	19	19	18
Blood Poisoning	—	—	1	1	—	1	—	—	2	—	1	—	6	14	3	13	11	3	14	10	6	11
Brain Disease	—	—	2	3	—	1	—	1	—	2	—	1	10	11	13	1	8	3	5	19	3	33
Bronchitis	1	1	2	2	3	1	2	1	—	1	2	—	16	9	10	11	12	15	20	24	28	24
Convulsions	2	1	1	3	4	—	1	2	—	1	1	—	16	28	27	25	33	28	47	32	39	37
Cancer	5	1	4	6	6	4	2	3	2	—	4	1	38	34	12	14	31	19	27	22	15	10
Croup	—	—	—	—	—	—	—	1	—	—	—	—	1	4	14	7	8	4	4	11	8	15
Cholera Infantum	—	—	—	—	—	1	—	18	14	2	3	—	38	30	32	24	38	30	37	33	50	31
Consumption	3	3	4	3	8	5	3	7	3	6	4	4	53	37	62	49	28	46	51	44	47	34
Colitis and Enteritis	2	—	—	1	4	2	—	—	11	2	—	—	22	12	13	11	14	16	22	13	17	20
Diarrhœa	—	1	—	—	1	—	1	1	3	1	—	—	8	4	8	4	10	5	9	5	7	4
Diphtheria	1	—	1	2	—	1	—	—	3	—	2	—	10	10	26	13	17	15	19	8	16	26
General Debility	4	1	1	3	1	2	—	1	2	2	2	2	21	32	28	32	31	34	41	39	44	35
Grip	—	1	—	—	—	—	—	—	—	—	—	—	1	2	3	6	—	7	8	9	2	3
Heart Disease	5	7	4	6	7	5	3	2	2	6	7	11	65	59	87	66	76	59	55	44	46	61
Hemorrhage	—	—	—	2	—	—	—	—	1	—	—	1	4	4	3	5	4	10	—	5	8	8
Kidney Disease	4	3	8	5	5	1	4	3	2	5	5	7	52	45	47	47	30	39	22	34	22	31
Liver Disease	2	1	—	1	1	—	—	—	1	—	3	—	9	15	5	8	8	6	9	6	9	7
Meningitis	2	1	1	—	4	—	—	3	1	1	3	1	17	16	26	18	14	11	23	17	20	—
Paralysis	—	1	1	1	—	—	—	—	2	1	—	2	8	18	16	10	12	8	7	7	8	10
Peritonitis	—	—	—	2	1	2	2	—	1	1	1	—	10	16	27	21	7	18	11	9	18	13
Pneumonia	14	11	7	17	16	9	4	5	3	1	6	5	98	100	121	89	73	95	86	109	83	97
Still Born	6	6	8	7	4	8	5	6	7	7	5	4	73	89	55	67	60	69	51	57	50	79
Scarlet Fever	—	—	—	—	1	—	—	—	—	—	—	1	2	3	8	18	14	9	7	3	1	12
Stomach Disease	—	1	1	—	—	1	—	3	1	2	1	—	10	9	14	11	6	8	6	10	7	6
Tumor	—	—	1	—	—	—	1	—	—	—	1	1	4	6	3	3	1	3	5	2	3	2
Typhoid Fever	1	2	1	2	2	—	2	2	—	3	1	2	18	8	11	14	6	18	16	15	19	15
Weakness	2	4	1	1	1	3	1	3	6	5	4	1	32	34	43	33	29	39	45	22	8	19
Other Diseases*	9	12	11	11	9	12	6	10	6	6	7	4	103	86	97	93	77	78	73	50	59	62
Totals by Months	76	67	70	89	82	64	46	92	86	72	81	56	881	868	945	819	734	793	801	745	716	792

*Other deaths, not included in the classification above, but included in the totals, are as follows: Anemia 1, arterio-sclerosis 1, asthma 9, complication of diseases 5, diabetes 9, laryngitis 1, leukemia 1, delirium tremens 1, malarial fever 2, measles 2, pleurisy 3, abscess 6, suicide 3, unknown 4, exhaustion 3, hyperemesis 1, purpura 1, spina bifida 1, strangulated hernia 3, whooping cough 6, constipation 1, inflammation of the bladder 1, inflammatory rheumatism 1, rickets 1, atelectasis 2, congestion of the lungs 3, alcoholism 2, intestinal obstruction 5, malignant disease 1, gangrene 4, hydrocephalus 2, intussusception 1, locomotor ataxia 4, extra-uterine gestation 2, confinement 2, colic 1, cramps 2, malnutrition 3, pyrosis 1, biliary calculus 1, rheumatic fever 1, jaundice 1.

DEATH RECORD COMPARISONS.

For the twelve months ending November 30, 1906, there were 881 deaths in Wilkes-Barre, 13 more than in the preceding year. The highest on record was in 1904, when there were 945 deaths. In considering these totals it must be remembered that all deaths occurring in the Wilkes-Barre hospitals are counted in the Wilkes-Barre totals. Often these are out of town cases. There are many hospital deaths from accident, especially of people who do not belong to Wilkes-Barre. The city ought not, by right, to have such cases added to her mortuary record.

All still births and premature births are added to the list. It is doubtful whether these should be counted in the death record. If the out of town cases dying in the hospitals, and still and premature births were deducted, a much better showing would be made. The latter alone number 73 for the year.

The last ten years in Wilkes-Barre show a mortality average of 809, so that 1906 shows 72 in excess of the average. Of course the increase in population must be taken into account. The 1906 mortality rate, based on a population of 59,000, is between 14 and 15 per cent.

As usual pneumonia leads the list with 98 deaths—2 less than in 1905. The lowest in the past ten years was 73 in 1902, and the highest 121 in 1904. In ten years there have been 951 deaths from pneumonia.

There were 95 deaths from accident—8 more than the preceding year. The high water mark was 100, in 1904. All deaths from accident in the hospitals of out of town cases are included in the Wilkes-Barre totals, as stated above.

Heart disease numbered 65 deaths, six more than the previous year. The 1904 record, 87 cases, was the highest in the history of the city.

Consumption caused 53 deaths, a considerable increase over 1905, when the total was 37. The 1906 record was the highest in a number of years with one exception, there being 62 deaths in 1904.

Cancer also showed an increase—38 deaths, as against 34 for the previous year. Ten years ago there were 10 deaths. The average deaths for the past five years was 26, and for the preceding five years 18. Of late there seems to have been an upward tendency in deaths from this disease.

There were eight more deaths from cholera infantum than in the previous year.

There was only one death from grip reported, although it is quite probable that a number of grip cases developed into pneumonia, bronchitis, etc.

Kidney diseases caused seven more deaths than in 1905. The number—52—is the largest in ten years.

There was a considerable decrease in the deaths from paralysis—8 in 1906, and 18 in 1905.

By far the larger number of deaths are caused by accident, apoplexy, cancer, consumption, heart disease, kidney disease, pneumonia, and cholera infantum and weakness among children.

There were 18 deaths from typhoid fever, against 8 for the preceding year. The average for ten years was 13 deaths. It will be seen that the 1906 record was considerably above the average. It must be remembered that a number of cases from out of town are brought to the Wilkes-Barre hospitals. These are included in the Wilkes-Barre totals, although they do not belong there. The seeming high mortality shown by the table is due to the fact that while all deaths are reported, probably not more than half the cases are reported. Negligence to report cases makes a bad showing, as the mortality is made to appear at least twice what it really is.

There were 92 less cases of diphtheria than the previous year, but the number of deaths was the same in each year—10. The table shows a great reduction since 1895, when there were 88 deaths, and in 1892, when there were 130 deaths. For the last

10 years, under anti-toxin, the deaths from diphtheria have averaged 16, while for the five years preceding the use of anti-toxin, the deaths averaged 80 per year.

There were 105 more cases of scarlet fever than during the preceding year, but one death less. In 1905 there were 166 cases and 3 deaths, and in 1906 there were 271 cases and 2 deaths. In ten years there have been 1,944 cases and 77 deaths.

Measles had more cases in 1906 than in any other year in the past ten years, with one exception. There were 430 cases in 1906, and in 1901 there were 507 cases. There were 2 deaths in 1906. There are doubtless a number of cases that are not reported, no physician being employed. The disease is decidedly fluctuating. In 1898 only one case was reported, while three years later 507 cases were reported.

CONTAGIOUS DISEASES.

	Diphtheria.		Typhoid Fever.		Scarlet Fever.		Measles.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
December, 1905 . .	17	1	8	1	42	0	3	0
January, 1906 . . .	17	0	7	2	68	0	37	0
February	13	1	7	1	34	0	35	0
March	7	2	4	2	22	0	91	1
April	10	0	6	2	24	1	102	1
May	12	1	3	0	11	0	81	0
June	5	0	3	2	10	0	59	0
July	7	0	12	2	17	0	12	0
August	8	3	6	0	15	0	2	0
September	9	0	7	3	10	0	4	0
October	13	2	10	1	11	0	0	0
November	7	0	4	2	7	1	4	0
Totals 1905	125	10	77	18	271	2	430	2
Totals 1906	217	10	58	8	166	3	228	0
Totals 1904	313	26	36	11	88	8	391	3
Totals 1903	182	13	57	14	205	18	185	2
Totals 1902	162	17	34	6	409	14	66	0
Totals 1901	86	15	85	18	227	9	507	3
Totals 1900	140	19	61	16	198	7	49	0
Totals 1899	166	8	48	15	223	3	144	1
Totals 1898	160	16	84	19	88	1	1	0
Totals 1897	169	26	58	15	69	12	229	0
Totals 1896	266	36	145	24	51	2	14	0
Totals 1895	299	88	77	21	70	4	15	0
Totals 1894	—	82	—	21	—	1	—	7
Totals 1893	—	52	—	16	—	—	—	5
Totals 1892	—	130	—	21	—	23	—	0

In the years 1892–1894, as given above, the contagious cases were not reported to the city clerk—only the deaths.

Besides the diseases noted above, there were reported, in 1906, 19 cases of chicken pox, with no deaths; 4 cases of mumps, with no deaths; 32 cases of whooping cough, with 6 deaths, and 2 cases of cerebro-spinal meningitis, with 2 deaths.

BIRTHS IN WILKES-BARRE.

The following were reported to the city clerk's office. During the latter part of the year there was some confusion as to the proper person to whom to report—whether to the city clerk or to the State Board of Health's local registrar, and it is possible that not all of the births were reported to the city clerk:

	Males.	Females.	White.	Colored.	Totals.
December, 1905	57	46	101	2	103
January, 1906	47	60	105	2	107
February	53	47	99	1	100
March	59	49	107	1	108
April	42	39	80	1	81
May	59	62	119	2	121
June	52	49	100	1	101
July	58	54	109	3	112
August	57	60	115	2	117
September	54	31	84	1	85
October	42	38	80	0	80
November	45	41	86	0	86
Total for twelve months					1,201

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FOR THE

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NEPHRITIS.

BY DR. H. A. FISCHER, WILKES-BARRE, PA.

READ FEBRUARY 6, 1907..

Although some knowledge of the occurrence and importance of renal affections had been acquired by the older physicians, the service of clearly recognizing the frequency of these diseases, their important anatomical forms and chief clinical symptoms belongs to Richard Bright, an English physician.

In his first work, published in 1827, he advanced a special knowledge, that in many cases of general dropsy, associated with a secretion of albuminous urine, a primary affection of the kidneys must be regarded as the true cause of the disease. Since then, "Bright's disease" is the term commonly employed, but in whose stead anatomical terms would be more proper, as many forms of renal disease were formerly classed under it which, according to our more accurate present knowledge, must be separated.

Christison, Osborne and R. Willis in England, and Rayer and Solon in France, later confirmed or enlarged upon Bright's statements. In 1851 Frerichs published a work in Germany, in which he divided "Bright's disease" into three different stages, based on the histological investigations of Reinhardt. This division was quite generally accepted until gradually displaced by further clinical experiences. Other, and probably more accurate divisions were then advanced by Johnson, S. Wilks, Traube, Bartels and others, but it is only of late years that a natural theory of renal diseases based on general pathological investigations has been accepted.

The chief *reason* why the kidneys are so often affected, either alone or in conjunction with diseases of other organs, is because of the fact that the body must dispose of all forms of injurious matter, circulating in the blood, and the kidneys are called upon to perform a great part of this process of elimination. These injurious matters may be divided chiefly into

two groups, the chemico-toxic and the organized infectious substances, remembering that in cases of infection it is comparatively rare for the germs themselves to reach the kidneys and there fix themselves, but that most cases are due to toxines formed in the body as a result of the infectious process and producing a nephritis while being excreted through the kidneys. This accounts for the sympathetic involvement of the kidneys, after the ingestion of many poisons, and also in a great majority of all infectious diseases.

While these are the chief forms of origin for many renal diseases, other causes must be considered which are much rarer, one way especially important in which the disease-producing element may enter, being from the lower uninary passages. Disturbances of circulation and mechanical injuries may also make themselves manifest in the kidneys. The clinical symptoms of the different forms of nephritis are only in small part referable directly to the diseased organ.

The anatomical position and the physiological condition of the kidneys render it almost impossible to discover changes in size and consistency, etc., by direct examination, and characteristic subjective local symptoms are not pronounced. We are, therefore, dependent chiefly upon two groups of symptoms for our diagnosis, examination of the urine, which by experience we know is altered in nephritis, and to the discovery of certain manifestations in other portions of the body, which are dependent upon the renal affections.

The most important changes in the urine, are the presence of albumen and casts.

Albuminuria is the most constant symptom and may by itself, in many cases, render diagnosis of nephritis possible with complete certainty. The urine in some cases of apparently healthy persons, especially after physical exercise, emotional disturbances, cold bath or a hearty meal, may contain a slight amount of albumen. Occasionally, in some few individuals, especially in early years, marked albuminuria in the day time, with clear urine at night, may be seen, yet these persons are apparently in perfect health. This has been called

intermittent or functional albuminuria, but it is questionable if such conditions can be regarded as purely physiological, even if no symptoms are associated with them, and I believe that every case of persistent excretion of albumen, which can be clearly demonstrated by our ordinary methods, should be regarded as somewhat pathological. The commonest methods employed for the detection of albumen in urine are the heat test and Heller's test, both of which are satisfactory if one remembers their fallacies. In using the heat test, if the urine be not normally acid, a few drops of acetic or nitric acid should be added. A precipitation of phosphates or carbonates should not be mistaken for albumen. This error can be avoided by the further addition of a few drops of these acids, which will dissolve the precipitated salts, while not affecting the precipitation of albumen. In Heller's test, it should be remembered that while the albumen ring is commonly spoken of as being at the point of contact of the acid and the urine, there is also a color ring at the same location, disseminating into the acid below and the albumen above, and often times a white urate ring which lies from a quarter to a half-inch above this point and which is easily dissolved by the application of heat.

Another test easily applied, and which can be safely recommended, is the acetic acid and potassium ferro cyanide test, one-tenth volume of acetic acid is added to the urine and then a few drops of the 10% solution of potassium ferro cyanide, the precipitation of albumen occurs at once, excepting where only a slight amount is present. The quantity of albumen may, for all ordinary purposes, be estimated by the height of settled precipitate of albumen after applying the heat test as one-third or one-fourth volume, etc., this, however, should not be accepted as being a definite determination of the amount of albumen present by weight. Approximately, however, a deposit of albumen which has been allowed to settle and occupies about one-half volume of urine, corresponds to about 1% by weight of albumen, one-third volume equals ½% by weight, etc.

Having determined the presence of albumen, it is important

to know if it is of true renal origin or has been mixed with urine after it has left the kidneys, as in the bladder, ureters, etc. (spurious or accidental albuminuria). This may occur when the urine is mixed with blood, as in hemorrhage from the kidneys, ureters, bladder or urethra or with pus as in pylitis, cystitis, etc. Where this occurs, the amount of albumen is usually slight and corresponds with the amount of blood and pus present, and microscopic examination reveals blood or pus corpuscles. In true renal albuminuria we may find distinct morphological elements or urinary casts. The theory of albuminuria, which is at present most generally accepted, is based on the fact that the capillaries, instead of opening directly into the malpighian bodies are protected by an epithelium possessing the peculiar physiological function of preventing the transudation of the serum-albumen of the blood as well as the water. In nephritis, disease of these epithelial structures render them permeable by destruction of their physiological properties (Heidemhain) and this transudation is probably assisted by disease of the vessel wall. This theory is supported by physiological experiments producing albumen in the urine by checking the arterial supply of the kidneys by constriction of the renal arteries. Kidneys in this condition, if removed and boiled, show coagulation of albumen in the capsules of the glomeruli, proving that the passage of albumen has taken place here. Changes in the composition of the blood are responsible only in so far as they interfere with the nutrition of the walls of the glomeruli. Runeberg's experiments disprove the theory of the effect of blood pressure. He has shown that in filtration of albuminous solutions through animal membranes, an increase in the filtration pressure has been followed by a decrease and a fall in the pressure by an increase of the percentage of albumen in the filtrate.

Besides albumen, certain other elements visible under the microscope are of importance in the diagnosis of nephritis. These are known as casts and were first properly recognized by Henle in 1842. They are cylindrical bodies, corresponding in breadth to the width of the tubules and only exceptionally

reaching a millimeter in length, consists mainly of coagulated albumen, giving rise to the old name of "fibrine casts," or "fibrinous casts." The chief forms of casts are the hyaline, epithelial, waxy and granular. The hyaline casts are clear, homogeneous, colorless, flexible casts, sometimes wide and sometimes narrow, sometimes long, sometimes broken off short, usually straight but often curved. They are quite resistent to acids, easily dissolved by heat. They are often covered to a greater or a less extent by various deposits. These deposits may be (1) red blood corpuscles, important because they indicate hemorrhages of kidneys themselves. (2) White blood corpuscles, (3) epithelium, differentiated from the white blood corpuscles by their angular shape, size and nuclei. (4) Fatty granules, either fatty or degenerated epithelium or white blood corpuscles filled with fat drops from the fatty degenerated cells. (5) Little granular masses of coagulated albumen, fat drops, urates, bacteria or granules of haematoidine from the destruction of red blood corpuscles.

Epithelial casts are easily recognized and always indicate desquamation of epithelium. They are composed exclusively of renal epithelium, although hyaline casts may be the base to which the epithelial cells adhere. Epithelial casts and separate epithelial cells may show granular or fatty changes.

Waxy casts are almost always rather broad and usually yellowish and opaque. They are found most frequently in severe acute Bright's, either primary or secondary to scarlet fever. The theory of their origin is a waxy degeneration of the renal epithelium, which gradually coalesce and they are always indicative of severe disease.

Granular casts represent the transition stage of epithelial casts into waxy casts. Genuine blood casts are not frequent, they consist of coagulated blood and represent casts of the tubules into which hemorrhages take place.

Casts have been well named "messengers from the kidneys," and their clinical significance is great since they are not found in normal urine, or, only exceptionally and in small numbers. They are always a sure sign of the existence of renal

disease and point clearly and with certainty the type of special pathological processes of the kidneys. The blood casts and the red blood corpuscles attached to the cylinders point to hemorrhages, epithelial casts to a desquamation of the epithelium, white blood corpuscles to an emigration of colorless cells from the vessels and fatty granular cells to fatty degeneration in the kidneys. While the changes in the urine undoubtedly render a diagnosis of nephritis positive, certain other symptoms often occur which may be the first to call our attention to the importance of urinalysis. Dropsy is one of these and while it may occasionally be entirely absent in both acute and chronic nephritis, it is usually a very prominent symptom. The most acceptable theory for its occurrence, and one which seems to be borne out by clinical observation, is a retention of water in the body due to loss of function of the renal epithelium caused by the pathological changes mentioned above. The oedema of nephritis rarely occurs until the daily amount of urine excreted has been greatly diminished for several days. Objection to this theory has been offered on the ground that the system might use other channels of elimination, as the skin and intestines. Again, we often see in acute nephritis and nephritis of scarlet fever, oedema appearing suddenly, while in severe forms of nephritis, as those occurring in diphtheria, septic diseases and pneumonia, it may be entirely absent even though the amount of urine is greatly diminished. Again, cases of complete anuria, due to pressure on the ureters, have existed for several days without the slightest signs of oedema. Transudation of water from the vessels into the tissues is permitted by the abnormal permeability of the epithelium, but just what causes this change has not been definitely determined. It seems, however, to be due to (1) the same substance causing nephritis, (2) substances formed secondarily to it, or, (3) certain products retained in the blood because of a defective elimination. Renal dropsy generally appears first in the face, the puffy, doughy appearance of the face being the first alarm of kidney affection. In severe forms extensive dropsy in the skin of the trunk and dependent parts may occur as may ascites, hydro thorax, etc.

The fluid transuded in dropsy is very similar to thin blood serum and is composed 97-98% of water, ½% salt; albumen is generally present in a slight amount and urea has been found. The failure of the kidneys to perform their work satisfactorily, not only decreases the amount of water eliminated, but also the solid constituents of the urine, the salts, urea, etc., which may be retained in the blood and circulate there. This accumulation of the urinary constitutents in the blood gives rise to another and important group of symptoms often seen in nephritis, called uremia.

This condition is essentially an intoxication of the body by the substances mentioned above, but that it is due to urea is not borne out by the result of experiment on animals, in which large amounts of urea are injected into the circulation without any symptoms of poisoning.

The clinical symptoms of uremia vary from the mildest symptoms to the severest nervous symptoms which may be the immediate cause of death. The milder uremic symptoms, consisting of headache, somnolence and mental stupor, and very often nausea, eructation and vomiting or of slight twitchings or tonic contractions of the muscles of the face or extremities may appear alone or may precede or follow the severer forms.

The most characteristic symptoms of severe uremia is the uremic convulsion, which resembles closely an epileptic attack, beginning with a short tonic stage and followed by vigorous clonic contractions in the face and extremities. The face becomes cyanotic, pupils usually dilated, almost without reaction, respiration quickened, pulse small and rapid and scarcely to be felt in the radial artery, temperature sometimes raised, or the spasm may begin with short, jerky contractions in one extremity and then involve the muscles in the trunk, face, etc. The spasms usually last a few minutes, followed by a deep coma and stupor. There may be several attacks in the twenty-four hours, during which time a complete loss of consciousness exists. Uremic blindness is usually left after recovering from convulsions and develops quite rapidly. The reaction of pupils to light is almost always retained. This blindness usually disappears in a few days.

Acute parenchymatous nephritis.—Synonyms acute nephritis, acute diffused nephritis, acute desquamative nephritis, acute tubal nephritis, acute Bright's disease, acute catarrhal nephritis, croupous nephritis, albuminous nephritis, hemorhragic nephritis, actute albuminuria, acute renal dropsy.

Definition.—Acute parenchymatous nephritis is an acute inflammation of the kidney, the tubular, the vascular and interstitial tissues being simultaneously affected in different degrees in different cases.

Etiology.—It occurs in great frequency as a sequel or complication of all sorts of infectious diseases, most frequently in scarlet fever, usually appearing towards the end of the third week of the disease. It has been met with in measles, smallpox, varicella, typhoid, typhus and recurrent fevers, frequently in diphtheria, septic diseases, erysipelas, croupous pneumonia and follicular tonsilitis. Sometimes seen in skin diseases as impetigo, pustular eczema, etc., as well as in severe burns.

Toxic nephritis may occur from the ingestions of poisons, as mineral acids, sulphuric, hydrochloric and nitric acid, oxalic acid, phosphorus, arsenic, lead, mercury and potassium chromate.

Among the internal remedies which may cause nephritis are cantharides, squills, balsam of copaiba, turpentine, salicylic acid and chlorate of potash. It has been caused from the external use of tar, petroleum, styrax, naphthol and from a too free use of carbolic acid and iodoform in open wounds.

Nephritis may also arise from the use of excessive amounts of spices, alcohol, horse-radish or very acid foods. Exposure to cold and wet are often the cause of nephritis. It is more often a disease of early age, although when caused by cold or any of the causes named, excepting scarlet fever, it is more likely to affect adults. It is rare after forty. Males are more frequently attacked than females because of more frequent exposure.

Pathology, microscopic.—The organ is enlarged, especially in thickness, and feels hard, the result of being swollen within an unyielding capsule. The capsule is non-adherent and strips

readily, leaving a smooth surface. The surface of the organ is congested, the veins injected. On section, the cortex is swollen, the cut surface smeared with dark red or chocolate hued blood, the vessels are injected and a pale area lies between them. The malpighian bodies are enlarged and a distinct dark red. The *microscopic* changes are tubular and glomerular and interstitial. The tubular changes may vary from cloudy swelling to granular degeneration. The tubules are distended as a result of the swelling of the cells and in later stages still more distended because of the granular debris. Red blood corpuscles and leucocytes. The nuclei of the cells are sometimes visible and sometimes obscure; fat drops may be present.

Glomerular changes include swelling and desquamation of the capsular epithelium, accumulation of cells in the capillaries, due to proliferation of their endothelium or an accumulation of white blood corpuscles. The malpighian capsules may be distended by blood and leucocytes by rupture of the capillaries.

Interstitial changes.—In mild cases, no interstitial change. In other cases there is a transudation of serum with a few leucocytes and red blood discs. In severe cases, the transudation is especially marked between the convoluted tubules and around the capsule.

Symptoms.—As noted above, one of the most important symptoms and one of the first to manifest itself is dropsy. This has already been described. Simultaneously with, and sometimes earlier than the dropsical symptoms is a dimunition in the quantity and an alteration in the quality of the urine. The urine is darker than natural, often smoky. Specific gravity high, 10.25-10.30 in the beginning, diminishing as the symptoms abate and amount of urine increases. The presence of albumen has been mentioned. The twenty-four hours secretion is diminished in quantity. Allowed to stand there is a precipitation of a brownish or reddish-brown sediment, microscopic examination of which shows it to be composed mainly of casts (epithelial, blood, hyaline, waxy and dark granular), free cells of the uriniferous tubules, blood corpuscles, uric acid crystals and granular urates.

Along with the diminished quantity of urine there is a desire to frequent micturation, a purely reflex symptom, fever not marked, may be absent, pain is not often present. The pulse tense, hard and full, slow at first, later accelerated. Occasionally the nose bleeds, due to the increased arterial pressure. In the digestive apparatus, vomiting is the most important symptom, usually the precurser of uraemia, which has also been considered. The appetite is diminished, bowels usually constipated. The duration of acute nephritis is variable from a few days to several months, or acute nephritis may become chronic.

Diagnosis.—The general symptomatology is so meagre that our diagnosis must rest on the urinary examination, but the history of the case and its etiology is important. Acute primary nephritis is distinguished from acute exacerbation of chronic nephritis by the absence of broad, fatty casts.

Prognosis is guardedly favorable. The average duration is from two to six weeks. It may terminate fatally from exhaustion, uraemia or oedema of the lungs.

Treatment, prophylactic.—In diseases which experience has shown are prone to secondary nephritis, as scarlet fever, suitable clothing, a mild diet and the free use of liquids, such as plain, distilled or carbonated waters, and lemonade are to be recommended to promote the secretion of urine. Warm clothing, warm baths, and alcoholic rubbings, stimulating the cardiac activity.

Hygienic measures are important. Every case, however, mild, should be confined to bed and warmly covered, thus avoiding exposure to cold and often in itself stimulating the skin, keeping the patient in a mild perspiration. Our chief aim in treatment is the prevention of injurious results from the accumulation of water and solid constituents of the urine, because of defective elimination and to remedy these results as far as possible if they have occurred. The activity of the skin is made use of, and is stimulated or assisted by the use of hot baths, 95°-105°, hot packs, etc. These may be assisted by administering warm drinks, Spirits of Mindererer or Dover's

powder, or in cases where the skin fails to respond to these measures, one-eighth to one-sixth grain pilocarpin may be given hypodermically. Cold applications to the head are comfortable to the patient who may be left in the pack for from two to three hours. Next to the skin, the intestines are important in the elimination of the deleterious substances, therefore, we often prescribe drastic cathartics as salines, elaterium, compound jalap powders, etc.

Diet.—The regulation of the diet is important. Milk has undoubtedly proven the most suitable food and in many cases acts as a remedy. Milk may be given plain, as whole milk, skimmed milk or buttermilk, or it may be modified by the addition of soda water, seltzer water, coffee, salt or a little cognac. No meat should be allowed while symptoms are present. When the kidneys become more active and the character of the urine improves, we may add such articles of diet as bread and butter, plain puddings, lettuce, water-cress, grapes, oranges, stewed apples, etc., but, if possible, a milk diet should be taken for a long period, later eggs and meat broths may be taken, also white meat of chicken.

Local treatment.—The application of cups, leaches, ice or hot poultices have been recommended, their object being mainly to relieve renal congestion. For dropsy, ascites, etc., drainage by puncture or aspiration.

Medicinal.—Diuretics are often suggested early in the treatment. Those most frequently used are infusion digitalis, caffeine, potass. acetate or bi-tartrate.

For uremia, chloroform is used to control the convulsions. Bromide and chloral to prevent their return and venesection, diaphoresis and catharsis as mentioned above. During convalescence, ferruginous tonics are recommended for the anemia.

PLEURISY.

BY DR. NATHANIEL ROSS, WILKES-BARRE, PA.

READ FEBRUARY 20, 1907.

Pleurisy is a fibrinous inflammation of the pleura, being either acute, sub-acute or chronic in character, occurring at all ages, from the child of a few weeks old to the aged.

Its causes are cold and exposure, injuries to the chest walls, pneumonia, pericarditis, small-pox, rheumatism, puerperal fever, and in the chronic form, tuberculosis, alcoholism and Bright's disease.

Osler says, "Inflammation of the pleura is doubtless for the most part a symptom of a condition rather than a separate disease, and in a majority of cases is excited by micro-organisms or their products. The principal bacteriological forms are the tubercular, pneumococcic and streptococcic."

The symptoms, in an acute attack, are chill or chilliness, and in children, vomiting or convulsions, followed by fever, pain and cough.

The fever, in acute cases, being 101° to 102° F., returning to the normal by lysis in a week or ten days, but may persist for weeks, taking on a hectic character. Such cases are probably tubercular.

In the pneumonic type the temperature will run as high as in pneumonia, with an incomplete crisis, followed by a secondary rise.

The pain is of a sharp, lancinating character, being near the nipple or in the axilla of the affected side, and is increased by coughing or it may be referred to the back or any other organ; in some cases the pain has been so circumscribed in the abdomen that the diagnosis of appendicitis has been made and the patient operated upon.

Dr. J. B. Herrick, in *American Medicine* of 1903, says that in acute inflammation of the pleura we do not infrequently have abdominal pain. This is sought to be accounted for in various ways. One is, that the lower six intercostal nerves supply not only the pleural but also the abdominal muscles,

hence the pain could be readily referred to the abdomen. Again he says the phrenic nerve may play some part in the peculiar condition and this referred pain may give rise to the diagnosis of appendicitis, cholecystitis, etc.

The cough is a dry, hacking, suppressed one, as each paroxysm increases the pain. The pulse is compressed from 90 to 120 to the minute. The respirations are rapid and shallow, from 30 to 35 to the minute. The frequency being due at the onset on account of pain, and later when the exudation takes place, on account of the bulk of the exudate.

The sub-acute attack begins insidiously, following cold or exposure and fatigue in the aged or enfeebled. Patients complain of a sense of weariness, shortness of breath, aggravated on exertion, evening fever, followed by night sweats, short aggravating cough, none or very scanty sputum; the pulse is small, feeble, but frequent 100-120 beats per minute and the characteristic pain is usually wanting.

In the chronic variety there are irregular chills, fever, night sweats dyspnoea, palpitation, embarrassed circulation, with more or less prostration.

Physical signs.—In the first stage there is deficient expansion on the affected side with rubbing, crepitating friction sounds. Unless the amount of fibrin is considerable there will be no change in the vocal fremitus or the percussion note. In the second stage the affected side expands imperfectly and, if the effusion is large, there is an increase in its size with obliteration or bulging of the intercostal spaces. The apex beat is displaced to a varying extent, depending on the amount of effusion in right-sided exudates. The apex beat is displaced to beyond the left mammillary line to the fourth or fifth interspace or even in the axilla; in left-sided exudates it may be carried behind the sternum and be imperceptible or may be carried to the right of mammillary line in the third or fourth interspace; if the effusion is large the liver and spleen may be carried downward, the displacement simulating enlargement of these organs.

There is impaired resonance on percussion, passing into

dullness or absolute flatness as the effusion increases; this is usually first perceived posteriorly. With a moderate effusion, the patient sitting upright, the line of dullness has the S curve; this line beginning low down in the back, passes upward from the spine and curves obliquely across the back to the axilliary region, whence it descends anteriorly to the sternum.

A tympanitic percussion note or "Skoda's resonance," which may be elicited under the clavicles and above the level of the fluid posteriorly, is very suggestive of effusion.

The body is drawn toward the affected side, and in children with a large effusion the patient lies on the side affected.

Auscultation.—Commonly the breath-sounds over the fluid are weak or absent, but not infrequently in large effusions there is distinct but distant bronchial breathing. At and above the level of the fluid the breathing is broncho-vesicular or even bronchial.

At the upper line of the fluid there is often a peculiar quavering, hesitating quality of the voice sounds, or the bleating sounds of egophony may be present.

In children the voice and breath sounds may have a metallic or amphoric quality which, with loud rates sometimes heard, will strongly but incorrectly suggest the presence of a cavity. If the portion of the pleura which overlies the heart is inflammed there may be a pleuro-pericardial friction sound.

Diagnosis.—Uusally there is little difficulty in making a correct diagnosis from the symptoms, particularly the physical signs, but pneumonia, hydrothorax, pericardial effusions, interthoracic growths and hepatic abcess or cysts may cause some uncertainty.

In pneumonia there is an initial chill or rigor, the fever is higher, the prostration more decided, the dyspnoea greater and also rusty sputum; labial herpes is suggestive of pneumonia and the cheek of the affected side is unusually flushed, which as a rule is not seen in pleurisy. The dullness is less resistant, the vocal fremitus and vocal resonance is increased, while in pleurisy these are diminished or absent. There is no bulging of the intercostal spaces, neither is the liver, heart or spleen displaced.

Hydrothorax.—In hydrothorax there is absence of fever or pain and there is no friction sound and usually a history of heart or kidney disease.

Pericardial effusion.—In pericardial effusion there is pulmonary resonance at the base. Tympanitic or dull tympanitic resonance in the axilla and around the border of the distended sac, and the heart is not displaced to the right of the sternum, the dyspnoea is greater than the amount of fluid would indicate; the pulse is small and becomes weak or imperceptible during inspiration and usually there is a history of rheumatic fever.

Inter-thoracic growths.—Carcinoma of the lung or pleura or hydatid cysts of the pleura may cause dullness, absent or weak breath-sounds, but the dullness is more circumscribed and lies more commonly in the middle or upper part of the chest, while the vocal fremitus and resonance are often preserved, resembling consolidation rather than fluid.

Hepatic abcess or cysts.—If the abcess or cyst is large enough to shove the diaphragm high enough up and cause a dullness or absent breathing at the right base, it may be mistaken for pleurisy with effusion, but the line of dullness is immovable and often curved, with the convexity upward and a friction sound is heard over the dull area.

Course.—In non-tubercular cases the fever lasts from one to three weeks, according to the severity of the attack, but the non-febrile stage is variable. Small effusion may disappear very rapidly but resorption of large effusion may require many weeks or months if not aspirated; in tuberculous pleurisy the resorptive process is very slow, as the effusion is re-absorbed; the physical signs gradually return to normal, rubbing, creaking and crepitating or friction sounds become audible when the separated surfaces come in contact, but dullness and weak breath-sounds may remain for months.

Prognosis.—This is usually good. Even in tuberculous cases complete recovery may take place, but death may occur suddenly from oedema of the opposite lung, cardiac degeneration or embolism or thrombosis of the pulmonary artery or of the heart.

Treatment.—In all cases the patient should be kept in bed until after the acute symptoms have subsided. Mild cases require little treatment. The books tell us if pain is troublesome, hot applications or mild counter-irritants or small blisters over seat of pain may be sufficient, or immobilizing the side with adhesive strips. If the pain is more severe, some writers advise the application of eight to ten leeches to the affected side, especially if it is a robust patient. Others advise ice bags, but heat as a rule is more agreeable; where the pain is very great, use morphine hypodermically; where the cough is troublesome use small doses of codeine or morphine; where the fever is high advise sponging the body with cool water.

In my own practice, for the last four or five years in acute pluerisies, I give five grains of salicylate of soda every three hours, which seems to control the pain and also the fever, and where the pulse is full I use Tr. gelsemium, and for the cough small doses of Dover's powder. Some writer has said that sodium salicylate is a specific for pleurisy as quinine is for malaria. I know that in the last four or five years I have seen no marked effusion in acute pleurisy, when there is moderate sero-fibrinous fluid, purging with concentrated solution of magnesium sulphate.

If the fluid should not show signs of absorption in ten days or two weeks it should be aspirated, especially in the apyrexial stage as the fluid is apt to re-accumulate if the aspiration is done while there is fever.

In pleurisy, where tuberculosis is suspected, special effort should be made to secure complete absorption of the exudate and re-expansion of the lung, The patient should be given a plentiful supply of good, suitable food, and gradually increasing doses of creosote, and should be taught systematic breathing, with deep inspiration and obstructed expiration and should live out doors as much as possible.

COMPOUND FRACTURE OF THE HUMERUS.

REPORT OF A CASE BY DR. DELBERT BARNEY, WILKES-BARRE, PA.

READ FEBRUARY 20, 1907.

If sanitation be "preventive medicine," the exercise of common sense ought to be regarded as preventive surgery; for much of our surgery is the result of the lack of the commonest kind of common sense. The case I wish to report is one of this kind.

On October 15, 1906, Mr. A. D., aged seventy years, started for bed about eleven-thirty P. M. Before going to his room he had occasion to go to the bath-room. The house in which he was living was comparatively strange to him, as he had lived there but a short time. The bath-room is reached by a long narrow hall, and from this a short passage leads to the back stairway. No door, gate or bar guards this passage. None ever do. The second stairway, as a rule, is a veritable trap for the stranger in the house, the aged and children. Nobody ever falls down the front stairs, because they are just where you would expect to find them, but the back stairs furnish a long chapter of accidents.

Mr. D., for some reason he cannot explain, stepped into the dark passage leading to the kitchen, and in an instant went crashing to the bottom. The force of his fall was sufficient to split off the edge of the step upon which he finally landed. Why his neck or back was not broken is a mystery. He was picked up and assisted into the dining-room, where I found him sitting in a rocking chair completely dressed, even to his hat.

I had been told over the telephone that his shoulder was dislocated, but when I removed his coat and vest, I found a large stain of blood on his clothes. That meant more than a dislocation, and when the shirts were taken off the diagnosis was easily made. The humerus was fractured near the capsule, and a spicule of the lower fragment had pushed its way through the muscles and skin and protruded nearly an inch. The undershirt at that point was tightly corked into

the wound around the spicule of bone. This may have limited the hemorrhage somewhat.

As it was impossible to properly care for so serious a case in his home, the arm was firmly bandaged to the body and the patient was made as comfortable as possible. The next morning he was removed to the City Hospital, where Dr. Howell was on duty. Under ether, the external wound was enlarged and the fragments of the bone brought into view. Several of the sharp spicules had to be removed and the edges trimmed up. Then holes were bored through the ends and a heavy silver wire brought the fragments securely together. The surfaces were so irregular, however, that it was impossible to get very good contact, and grave doubts existed as to whether union would result, especially since the upper fragments seemed to be but a mere shell.

The wound was closed in the usual way, leaving an opening for drainage, and a wedge-shaped pad placed in the axilla and the arm securely bandaged to the body. Our prognosis was very guarded, for visions of non-union, suppuration and other dire results were constantly before us. The patient was put to bed and the temperature-chart was anxiously scanned every morning. In ten days the wound was almost entirely healed and no suppuration had occurred. The temperature curve went down progressively, and within two weeks we had the patient up in the rocking-chair a good part of each day. He remained in the hospital four weeks; at his home his condition continued to improve, the only disquieting feature which developed being a swelling of the hand and fore-arm. This was thought to be due to pressure of the callous upon the return vessels.

The present condition of the arm, and the general health of the patient are excellent. Mr. D. can raise his hand to the top of his head, swing the arm and rotate it at the shoulder joint. In fact, all movements are normal, though somewhat restricted by stiffness. Considering the age of the patient, the force of impact which caused the injury, and the irregular line of fracture, union and restoration of motion are most gratifying.

CONGENITAL LUXATION OF THE HEAD OF THE RADIUS.

BY DR. H. W. DEIBEL, WILKES-BARRE, PA.

READ MARCH 6, 1907.

F. M. C., age fifteen years. Decreased function was first noted when patient was an infant by inability to hold a lump of sugar in the palm. The chief complaint was partial disability of each arm, illustrated by inability to grasp objects with the thumb on the upper surface. At one time had sudden pain in the left elbow on flexion, which gradually disappeared. The forearms were fixed, in respect to rotary motion, in full pronation. Flexion and extension were free. There was hyper-extension beyond the straight line. The space usually occupied by head of radius was vacant.

Another case occurred in the case of a boy of six years of age. Since birth the forearms had been fixed in pronation and extension. Owing to the fixation, the disability was great. Some improvement in the above cases was noted by the use of massage and electricity. I advised operation, but the parents refused to allow such treatment to be administered.

URINARY CALCULI.

BY DR. B. J. WETHERBY, WILKES-BARRE, PA.

READ MARCH 20, 1907.

The basis of my paper to-night is the report of two cases, which caused me to worry a good deal, and suggested a few thoughts, some of which will follow the report of the cases.

CASE I. G. H. L., aged 38, foreman in a machine shop, came to me February 15, 1904, with a history of pain in the penis and bladder, especially in the prostatic region, frequent urination during the day, but not at night, and itching and burning along the urethra. No history of venereal trouble. The patient's general health was good. At intervals of varying duration the patient had attacks of intense pain in the right iliac region, which had been diagnosed appendicitis, and an operation for the relief of that condition had been done several months before he came to me. While lying in the hospital, following the operation, the patient was entirely free from pain, but as soon as he resumed work the pain returned with its usual frequency and severity. During these attacks the pain was so agonizing that the patient was literally crazy, as Dr. Wadhams, who saw him in one of his attacks during my absence, can testify.

Examination of the urine in this case was negative. The sound showed no stricture, and the finger in the rectum showed a normal prostate. Beside the pain, the principal subjective symptom was an intense itching and burning, extending the whole length of the urethral canal, worse at the glans. The patient said he felt as if he must tear it off. This was his most constant symptom. By a process of elimination, covering several weeks of study and treatment, I became convinced that there was a stone somewhere. I carefully searched the bladder with negative results. The cystoscope was also negative in its findings. All local treatment was useless, and the usual internal remedies did not change the symptoms in the least. Morphia hypodermically, in one grain doses during an acute attack, was the only means of con-

trolling the pain. Finally, after a good deal of persuasion, he went to Prof. Horwitz, who introduced the cystoscope, and after finding nothing in the bladder, catheterized the ureters. The right one was all right, but about two inches up in the left one the catheter met an obstruction which he could not pass, Believing it to be a calculus, Dr. Horwitz forced some sterilized oil into the ureter, and a few hours later the patient, while urinating, passed a calculus almost as large as a pea, resembling a miniature chestnut burr. The free use of alkaline waters was ordered for two weeks, after which all treatment was stopped. The patient has remained well. I almost forgot to say that the X-ray was used in this case, but did not show the stone.

CASE II. J. H., real estate agent, aged 57, came to office August 10, 1905. From my case book I copy the following history: Two or three years ago passed gravel for quite a long time. Been troubled off and on ever since. A few days ago became much worse. Intense burning and itching along the urethra and heavy feeling in the perineal region. Pus deposits, heavy sediment, which, under the microscope, proves to be pus, phosphates, epithelium, streptococci and straphylococci in great numbers. Patient urinates very frequently during the day, and about twice at night. Cannot sit nor keep still on account of the intense itching and burning. Urine slow in starting, with about two ounces of residual urine. Prostate so large that I could not reach the upper border. All symptoms aggravated on walking or riding.

I started a course of urinary antiseptics and sedatives, with bladder irrigations, and in a short time the patient was able to attend to this business fairly well, although he was obliged to walk a good deal. After the soreness had subsided somewhat, I searched for stone with negative results.

The patient was under constant treatment, and as long as the bladder was irrigated regularly, and formin or salol taken internally, he got about his work, but always had to urinate often, was never free from the annoying burning and itching, and the cocci-containing pus was always present in large quan-

tity. I reasoned that if there was not a foreign body in the bladder he would have gotten rid of those symptoms, and gradually became convinced of there being a stone in the bladder, although I had him consult two other physicians, and none of us found a stone. So he went to Philadelphia, and only by the X-ray was the stone found. Dr. Wadhams also made a picture and found the stone. He was operated upon and a stone 2x2½ inches removed from behind the prostate. Being of that size, it must have been there for a long time, and an earlier operation would have been easier and would have given him several years of comfort, instead of a miserable existence.

I could cite other cases, but these two represent the classes I want to notice particularly, that is, stone in the ureter and stone in the bladder, and the difficulties that attend a correct diagnosis, as well as the importance both to the patient and physician of being right.

The first case had consulted a number of physicians, and had been operated upon for appendicitis. This meant a good deal to the patient; the dangers of so serious an operation, and the loss of time while in the hospital, as well as the hospital and surgeon's fee. It meant something to the doctor; as far as this patient is concerned, the doctor is damned very vigorously at that. And yet it seems that a correct diagnosis was almost impossible. Of course *after* the operation had been done, I could not see any symptoms of appendicitis, except the pain, and this was reflected to the bladder and penis, while there was absence of fever, disturbed pulse (except that which such severe pain would cause); no marked pain, on pressure over the region of the appendix, no disturbance of the bowels, etc. Perhaps the lesson in this case is to go slow and not operate in the absence of alarming symptoms.

The second case looked like a case of enlarged prostate with cystitis. Not a symptom was wanting. In fact, it was just such a case; but back of it all, aggravating and perpetuating the symptoms, was the stone. The diagnosis had to be made by exclusion, and that took a long time. If it had been an un-

complicated case of hypertrophied prostate with cystitis, the long course of treatment would have relieved the patient of all the urgent symptoms, if it did not make a complete cure.

In this second case, why did not searching discover the stone? The trouble was with the enlarged prostate principally. In cases of very much enlarged prostate, the vesical orifice is lifted up so high that a large stone can lie in the pouch behind the prostate, and not be felt with any instrument we can introduce, so that while we are able to enter the bladder easily the curved part of the searcher is not long enough nor abruptly enough curved to touch the stone; so that, notwithstanding the stone was not found, I felt sure it was there. The use of the X-ray was very satisfactory in this case. Dr. Wadham got a good picture, as did the radiographer in Jefferson Hospital. The stone, when removed, measured 2x2½ inches.

What causes stone to form is still in obscurity. Certain it is that they are more common in some sections of the country than in others. I heard Dr. Griffith of Kansas City, say that more patients with stone in the bladder came to him from Montana than from all other sections combined. It would be interesting to study the why. Probably the water in that state is the cause, as that is about the only difference between there and other places. Phosphaturia alone won't cause it. There must be some nucleus—a foreign body, a blood clot—and that nucleus, whatever it is, must become surrounded with mucus or muco-pus before stone formation begins.

While many of the symptoms of stone are always present in some degree, unfortunately most of them may be present in other conditions. (I am speaking of symptoms of stone in the bladder.) There is frequent and painful urination from beginning to end. Of course this system is not pathogonomonie, but when it persists in spite of well directed and prolonged treatment, we should always suspect stone. Then the patient is always worse when on his feet, or when riding or being jolted in any way. It seems to me that the gait of a man with stone is characteristic. He is careful of rough places, steps carefully when the pavement is elevated or sunken, and

is particularly careful in walking down stairs. He don't come down on his heels, and never walks with his chin in the air, but keeps his eyes on the pavement to avoid any unevenness. The body is generally stooped.

We have the pus, blood and bacteria in other conditions than stone, but a thorough course of treatment, general and local, either entirely cures this condition or greatly modifies it. If stone is present, the pus, etc., persists in spite of any treatment. At least that has been my experience. In cases of stone in the bladder, as well as in the ureter, there are times when the pain is almost gone, and times when the pain is as bad as that of a woman in labor—"a fit of the stone," as the older writers used to call it. During such times the pain is agonizing, the straining may be so severe as to cause hemorrhoids or prolapse of the rectum, and the patient may urinate as often as every fifteen minutes, day and night; in other words, there is one long spasm.

Personally, I have noticed the annoying itching and burning of the genitals in every case I have had. The patient with the small calculus in the urethra never came to the office without saying that he felt like scratching and tearing the genitals off. This was present between the acute exacerbations and between urinations. The sudden stoppage of the stream may be present, but very often it is not. If the stone is loose and of the right conformation, it may roll down over the vesical orifice and stop the stream. In my own practice, I have never had a patient with the symptom. However, patients often assume peculiar attitudes to assist urination. One patient I have lately squatted down with the toes of one foot on the floor and the heel pressing on the perineum. He could not urinate while standing.

No age is exempt, although stone is found more often before the age of twenty and between fifty and sixty. I know of one patient only two years old from whose bladder a large stone was removed. They are often found in patients with enlarged prostates. Primary stone is seldom found in women, owing to the short urethra and better vesical drainage.

All cases of suspected stone should be carefully searched and the stone located if possible, with the patient under full anesthesia, if necessary. The hips should be raised and the shoulders lowered. A few ounces of boric acid solution should be put into the bladder before introducing the searcher and after completing the search the bladder and urethra should be thoroughly irrigated with a hot antiseptic solution. The entire interior of the bladder should be slowly and carefully gone over with the bladder partly filled, and later with the bladder empty if the first search is not successful. An ordinary sound is a poor and uncertain instrument. I use the Thompson hollow searcher on account of its length, its short curve, and because being tunnelled one can fill or empty the bladder at will without removing the instrument. If you strike the stone you generally know it, although sounding is not the easy, simple procedure the books would have it, and a practiced hand may succeed where a beginner fails. If you don't strike the stone, it may be there anyhow. One of the causes of the failure is a very large prostate. This lifts up the vesical orifice, and the stone will be behind the prostate, out of reach of the end of the searcher, as it was in the second case I have reported in this paper. This was an enormous stone and had surely been there for a long time, but it could not be felt, even by Dr. Horwitz, on account of that large prostate. So, even if we fail, we must be reserved in the diagnosis. In this case the X-ray did very satisfactorily what the searcher failed to do.

BRAIN DEGENERATION.

CASE REPORTED BY DR. J. B. TOBIAS, WILKES-BARRE, PA.
READ MARCH 20, 1907.

Miss T., aged 23 years. About two years ago began to complain of severe pain in right temporal region, extending over right frontal bone.

She was treated without relief and was advised to have her eyes tested, which was done by Dr. Roderick, and glasses were prescribed, but all without any relief to headache.

Patient seemed to be in perfect health otherwise and continued at her work for several months, but the pain became so severe she was unable to continue at her work, and the pain began to extend to the back part of her head and neck on the right side, being almost unbearable at times. She was being treated for her eyes in the meantime.

About a week previous to her death I was called in to see her and found her suffering with a severe attack of vomiting and nearly blind. She was just able to recognize a person in the room. The right side of her face and neck was very much swollen, conjested and tender.

The pain in her head was relieved and vomiting ceased after treatment, and the patient was able to take food.

Two days later I was called hurriedly and found her right lung completely filled with mucous, which came very suddenly and from which she was unable to get any relief. There was no dullness.

Her blindness increased and the pain in her head and neck returned, and during the last few hours she lived she had almost lost the use of her right arm. Patient had no fever at any time during my treatment. She was not able to lie on her back at all. In was necessary to hold her in the sitting posture all the time, in fact she died sitting up.

Post Mortem.—In order to substantiate our diagnosis I was allowed to perform a post-mortem and found a mass about the size of a hen's egg beneath the posterior part of the cerebrum resting almost upon the right lobe of the cerebellum. It did not have any form but was a soft mass of broken down material, looking like decayed flesh. It did not seem to be separate from the brain proper but to be a part of the brain substance.

SYSTEM OF SANITATION IN USE IN WILKES-BARRE, PA.

BY DR. J. B. TOBIAS, WILKES-BARRE, PA.

READ APRIL 3, 1907.

It is my desire, in this paper, to call your attention simply to a few of the laws and system in operation in our city, without any intention to criticize the past or present officials in any of its departments, as they no doubt have performed their duties to the best of their abilities under existing conditions.

The laws governing third class cities of Pennsylvania have given the power to councils to create a board of health, to consist of five members to serve without compensation, two of which must be reputable physicians of not less that two years of practical experience in their profession. The board shall be appointed from districts, so that every part of the city shall be, as far as possible, represented. The board to have the power to appoint a secretary and health officers, not members of the board, at a salary to be fixed by them.

It was the intention of this law that the protection of the health and sanitation of these cities should be placed in the power of individuals who have an interest in the work, and two at least of its members shall have a knowledge of the work which should be done by a board of health for the proper protection of the health and lives of its citizens.

The city of Wilkes-Barre, as far as I can learn, with one exception, is the only third class city in the state of Pennsylvania which has not taken advantage of this law, but instead, appoints five members from each branch of councils, which constitute the sanitary committee. It has happened a few times in the history of the city that a physician has been at the head of this committee and has given his time and knowledge without compensation and often less than thanks. Our sanitary committee has, perhaps, accomplished much good and created many good laws but it has performed a very insignificant part in the administrative and executive government of our city, and I am told there have been years when only one or

two meetings of the committee have been held for the consideration of its work, and the results of the past speak for that truth. It was not the lack of work to be done, but a lack of knowledge of the work to be done.

Under our present system our officers are generally chosen without any regard to the knowledge, character or personal fitness of the man for the position which he is supposed to fill, but his appointment is dependent upon his political influence and personal friendship to the powers that be, so that prejudice, apathy, ignorance and selfish interests have barred sanitary progress and clogged the wheels alike of legislation and administration. If we are going to make use of the knowledge which modern science and education have given us, we must see to it that the control of our sanitation is placed in the hands of men and officers who are capable and willing to assume the grave responsibility which this knowledge, so full of opportunity and so promising of such glorious results, and to do this it is necessary that the appointments shall not be controlled by political influence and personal friendship, but to this department must be called men skilled and educated in the art of modern sanitation, and prompted in their actions by the exalted character of the trust reposed in them.

The time has come when our sanitary department should be one of the most vital and important parts of municipal machinery. The demands of communities for better protection to health and life is being made in no uncertain terms and the failure to provide such protection is a neglect of duties which our present age and knowledge have given us.

Appropriations.—Again, it is not sufficient to have men willing and capable to undertake this work, but it is also necessary to have sufficient money to accomplish these results and in this our city has failed most decidedly, as is shown by the following comparisons. Our city has, annually, paid into its treasury, $450,000 to maintain its different departments.

To our fire department is appropriated annually $52,000.

To our police department is appropriated annually $53,000.

To our street department is appropriated annually $79,000.

To our light department is appropriated annually $45,000.

To our health department is appropriated annually $4,400.

Again, the city of Erie, with a population of 56,000, appropriates to its health department $9,828.76, and the city of Allentown, with a population of 38,000, has appropriated this year $16,340. Johnstown, with a population of 39,000, appropriates $8,860. You will see, by comparison of these cities, that we are allowed less than one-half for our sanitary work, while our population is almost double some of these cities. We glory in our fire department, we feel proud of our police department, and so we should. But is the protection to our properties and homes of so much greater importance to a city than the protection of the health and lives of its citizens? It is good to pave our streets, but isn't it better to remove the filth, dirt and infection from them, and that is almost unheard of in Wilkes-Barre. We should have a street-cleaning department governed by sanitary laws.

Our Milk.—Our milk is examined and well done, as far as it goes. We know what per centage of fats, solids and how much water it contains, and sometimes its preservatives, but does this knowledge protect our health? Do we know under what sanitary conditions it is produced, to what contagious and infectious diseases it has been exposed and which it is capable of transmitting? Of these things, which are of vital importance to us, we know nothing, and we do know that germ-laden milk is capable of producing cholera infantum, consumption, infantile bowel troubles, diphtheria, scarlet fever and typhoid fever. And to protect us against these diseases our examinations must extend beyond the mere examinations of a few samples of our milk monthly. A rigid inspection of the dairies must be made. Contagious diseases must be quarantined around and near our farms. A law requiring a general examination of all cows for tuberculosis, or better still, that all our milk should be pasteurized, placed in bottles and sealed before delivery.

In these times, when the public is becoming aroused over the elimination of preventable diseases, when the authorities of nation, state and municipalities are being confronted with ques-

tions relating to life and health preservation, this gross neglect stands out as a disgrace to our city that cannot long be tolerated. The largest field for public effort in this great work lies in more rigid attention to our milk supply. It is a field that must be entered and taken care of by public authorities, supported by public funds.

WATER SUPPLY.—Again, the examination of our water is well done, as far as it goes. We receive monthly reports from our water inspector, and we know how much solids, chlorin, nitrogen and ammonia it contains, but is this knowledge any protection to the lives of our citizens? Would this knowledge have saved the hundreds of lives lost by the typhoid epidemics at Plymouth and Nanticoke? Did this prevent the needless sacrifice of many lives in the recent epidemic at Scranton, and prevent the death of 25,000 people in the state of Pennsylvania alone every year from the preventable disease—typhoid fever? Is this creditable to our state, to our municipalities or to American civilization? How long the state and cities will be content to wait, how much longer it will submit to the economic waste of life, resulting from present neglect and indifference to the common knowledge of decency and sanitation, it is hard to say, but the dreadful price we are paying now for this neglect will, sooner or later, compel attention from our state and municipal authorities. When municipalities are held accountable for the pollution of streams by sewer systems and infection of our water sheds, then perhaps they will discover it would be cheaper to live and use their money according to civilized rules than to sow the seeds of disease and death through indifference and neglect. It is not sufficient for us to examine our water after it has been carried to our homes and infected our households; but the source of infection needs our greatest attention. It is not sufficient for our water companies to patrol our water-sheds, as experience has taught, but this responsibility should be placed upon the municipality, the citizens of which are exposed to these infections. Remove the contagion and infection and you remove the disease. The proper control and protection of the milk and water sup-

ply of a city are not the only problems of modern sanitation which confronts us.

Drainage, proper disposal of waste products, good paving, good sewerage and buildings constructed with sufficient breathing spaces between them, so that all inhabitants may receive their proper proportion of fresh air and sunshine, and a general supervision of our food supply. Along these lines Wilkes-Barre is in great need of legislation by which these conditions may be restricted. There are many sleeping rooms in our city which accommodate fifteen or twenty persons, living in the unsanitary conditions with air-space enough for only three or four people. It is no wonder that tuberculosis thrives in our midst, and this subject alone is sufficient for a paper. I simply desire to refer to it and commend the efforts that are being put forth by public-spirited citizens with such glorious results. But here again, this condition deserves public support and public money for its maintenance and the city should provide a hospital, in a suitable location, where these unfortunates may have the proper care and treatment which they are unable to receive in their homes. Our city hospitals close their doors to the consumptive and they are allowed to remain in their homes, ignorant of the infection which they are sowing in their household and throughout our city.

In conclusion, let me repeat, if our city is going to receive the benefits of modern sanitation we must, first of all, have a board of health to consist of men scientifically equipped to deal with these special problems, and they must have the authority to act. We must have the proper man at the head of it, who is capable, energetic, fearless and aggressive, with a salary sufficient to insure independent action, and he must have appropriated sufficient money to enable him to obtain the best results, if our city is going to stand in the ranks of cities of modern and progressive sanitation.

It is necessary that we, as physicians, who by our knowledge and education are qualified to judge and command in these matters, shall assert our rights as citizens and demand that our city councils shall provide the proper means and officer to accomplish the results which our city needs.

MILK IN RELATION TO INFANT FEEDING.

BY DR. JOSEPH ROBY,
OF THE ROCHESTER, N. Y., BUREAU OF HEALTH.

READ APRIL 17, 1907.

Gentlemen of the Luzerne County Medical Society:

I want to thank you for the honor of being asked to speak before you and to assure you that I am not going into a long dissertation upon this threadbare subject. As has been said before, the ideal food for a baby is its own mother's milk, and the next best food is that of a healthy wet nurse. But at times these two sources fail and then we must look to some method of artificial feeding.

The malted foods and condensed milk are mentioned not to be condemned, but because, under certain circumstances, they really are most useful. I suppose to-day there are more children brought up upon condensed milk than any other one food. At the same time there is scarcely any food more criticized than this. It agrees with a great many children and they grow fat upon it, even if it does produce at times scurvy and rickets. Yet there is no choice between a live baby with rickets and a dead one without it. Children fed on this food, however, are liable to succumb rather easily to acute diseases and for this reason our main reliance is upon raw cow's milk.

The natural immunity and resisting power of breast-fed children is well known. And perhaps our reason for this lies in the fact that these young infants are able to absorb into their circulation immune bodies indirectly from the mother's blood. And as Maragliano suggests, these immune bodies may stimulate the infant's blood to a further production of immunizing substances. Late experiments have shown that the blood of breast-fed infants has a higher opsonic index than that of children artificially fed, but at the same time it was thought to be due to better general conditions. So that for the following reasons it would seem to be of the greatest advantage to feed a fresh raw cow's milk.

1st. The anti-sorbutic power of raw milk.

2nd. All immunizing power similar to fresh human milk.

3rd. Children less liable to be anemic and consequently more resistant.

4th. More digestible, both as regards fat and proteid. Until rather lately the great advantage that the malted foods and condensed milk have had over cow's milk, has been that they will keep almost indefinitely, even in warm weather, and that, consequently, they cannot by their own decomposition give rise to gastro-intestinal poisoning in the babies—which the ordinary city cow's milk is so liable to do, and which in the old days showed itself by the frightful mortality during the summer months. Years ago, when the medical profession became acquainted with this fact and recommended the pasteurization of milk, Dr. Goler, the health officer of Rochester, became much more interested in it and started a crusade for improving the milk supply of the city. As an educational force he decided to establish infant milk depots in the city. The first year there was a single station in charge of a trained nurse, where the milk, after being received from the farm, was diluted, run into nursing bottles and subsequently pasteurized. Owing to the success of this station another station was established the first year, and since that time there have been four stations every year, so that our city is fairly well covered. These city stations have been located in hardware stores, grocery stores, police station houses, and for the last two years one has been in the Homeopathic Hospital. They are all in charge of trained nurses, who weigh the babies, advise the mothers on the proper dilution of milk to use and also on the question of fresh air, sleep, clothing, etc. They do up the bottles in packages, take in and keep account of the money, for a charge is made for this milk. There are four dilutions put up. Our straight milk in eight-ounce nursing bottles costs two cents; another, five ounces milk, two ounces sugar solution, cost two cents; two and one-half ounces of each cost one cent, and lastly, one and one-half ounces milk and two and one-half sugar solution. This year, in addition to the work of the health bureau nurses, The Volun-

teer Nurses' Association has sent its nurse to the homes of these babies and performed what duties any of the physicians in the city may have recommended. More or less co-incident with the change from an antiseptic to aseptic surgery, Dr. Goler became convinced of the necessity for an aseptic instead of a dirty pasteurized milk. A milk inspector and chemist had been employed by the city, but the task of getting any number of men to be really clean in their production of milk seemed hopeless. So the next step was to change the bottling station to the farm, as it is done to-day. One trained nurse and assistants went to the farm and lived right there in tents. One of the city election booths, a portable wooden structure about fourteen feet by twenty-four feet, was erected for a bottling room and another tent for a sterilizing room. Here the nurse sterilized in Arnold's sterilizers—the milk pans, cans, strainers and bottles. She more or less overlooked the milking, then went to the bottling room and put up the bottles. They were then packed in ice and delivered to the city distributing stations.

So that the work may be seen to be, first, educational for the farmer, as the station has been located at different farms; second, educational for the mothers, not only in regard to feeding, but also fresh air, clothes, bathing, etc.; third, a good, clean milk in clean nursing bottles, in a correct amount for each feeding.

These stations have been open for two months each summer and they are now run at a cost of about twelve hundred dollars each year. This is the commercial side of it. The scientific or humanitarian side lies in the fact that comparing the ten years since the establishment, there have been about twelve hundred less deaths during the months of July and August. and about twenty-four hundred less for the entire year.

Impressed more and more by these results, Dr. Goler has been making greater efforts of late years to clean up the city milk supply, and in connection with him the milk commission has endeavored to assist by certifying to the product of dealers whose milk came up to the required standard. We had a milk commission for a good many years before we had any certified

milk. About two years ago the situation became with me more acute, for I had a great many babies to be fed with no good milk supply to give them. So I picked out a number of farmers near Rochester and told them that I would try to get some people to pay them an advanced price if they would do certain things. The farmer who did qualify had not the advantages of a college education, and his barn, although one of the best cow barns in Monroe county, was a very ordinary one. The main building was of two stories, the basement was of stone and partly underground on one side, and the upper part was of very rough boards, with a new but inexpensive wooden cow barn attached so as to form a T. There are no cement floors. There is an inexpensive wooden milk-room with wooden floors, situated about thirty feet away from the barn. Fortunately the man had a steam boiler and had constructed a metallic lined wooden tank for cooling the milk. This tank was converted into a sterilizer by making a cover fit tightly and running the steam-pipe into it, so that a temperature of 212 degrees could be easily obtained and all utensils sterilized. The cattle are ordinary grade cows, with a few Jerseys, but all tuberculin tested.

The directions below were given. The milk is poured from the milking pails into the bottle filler, the bottles filled, capped and sunk in ice-water. No aerator is used. In well-equipped modern dairies these may work well, but we have been afraid to advise it, unless one could control the air in the milk-room rather better than seemed possible here, and it seemed to us one more chance for infection. We think we have killed the dreaded animal heat bug-bear. We have not talked to a single milkman who has not held up his hands in holy horror at the idea of putting a tight cover on milk while it was warm. And yet this can be done and there will be no animal odor if the barn is clean. If milk produced in this way is kept cold at 45 degrees, it will keep sweet almost indefinitely. A quart of milk was opened every day to test it, and it kept sweet for sixteen days, and might have kept longer had there been any left.

The bacteriological counts of this milk in 100 examinations have given an average of 3853 cubic centimeters, or one-fourth teaspoonful, with 21 below 1000, the lowest 240, and the only one (29,000) above 20,000.

This man has certainly done without an expensive barn, what many another small farmer could do.

Very long and complicated rules have been given to milkmen, and have been put down in such a way that the men have not attempted any of them, because they did not realize which was the most important. We think that the rules should be very few and arranged in he order of importance, as follows:

First.—The protection of the milk from infection by scarlet fever, diphtheria and typhoid.

If one of these diseases develop on the farm, the patient must be immediately removed from the premises and must not come in contact with any one who has anything whatever to do with the milk. The milk-room, barn and cows should be thoroughly cleaned and every utensil must be sterilized by steam.

Children, who are more liable to scarlet fever and diphtheria, should keep away from the stable at milking time, and from the milk at all times. New employees at the farm should be closely questioned with regard to possible typhoid, and in suspicious cases should have a blood and urine examination.

In case of diphtheria every one on the farm must have an immunizing dose of anti-toxin.

These rules should be strictly enforced and the dairyman must be made to report these diseases to the health office. Failure to do so, either willfully or through ignorance, should mean a permanent revocation of the license. If no other place is available, patients with these diseases should be removed to a hospital, even at the expense of the municipality.

Second.—Cooling the milk and keeping it cold, or at least below 50 degrees. At first thought all might not agree to this being important, but on reflection it will be self-evident. Practically, at least, sterile milk cannot be drawn from the cow, so we start off with an excellent culture material already infected,

and, if allowed to stay or get warm, these bacteria multiply beyond comprehension, so that a milk containing 3,000 bacteria per c. c. in the beginning, at the end of twenty-four hours would contain many millions, and be infinitely worse than one containing 30,000 at the start, that had been kept cold all the time. If kept very cold the bacteria would not increase much, and the number might be even less in twenty-four hours.

Third.—Keeping the utensils sterile is about as important as keeping the milk cool. Milk-men must be made to understand that their "scalding" is not so efficacious as actually boiling water in the utensil, or submitting it to steam under pressure for some time, and that nothing like clean milk can ever be produced unless the vessels are comparatively sterile.

Fourth.—Milking directly through sterile cheese cloth into a pail with a small (five-inch) opening. On some thirty comparative counts, versus the open pail at the milk station during 1904, this cut the average count exactly in half. Cheese cloth covers must be changed at the time the pail is emptied.

Fifth.—Keeping milk tightly covered. These five points are absolutely necessary, and without following them milk with few bacteria can not be produced. Milk produced in this way will probably run about 10,000 to the c c. Now every one of the subsequent points that are followed will reduce the count a certain amount, so that in perfectly equipped and managed dairies the count may run regularly at 1,000 or below. These points are:

Sixth.—Discarding the first draws from each teat.

Seventh.—Keeping the cow absolutely clean.

Eighth.—Keeping the milkers' hands and clothes clean.

Ninth.—Keeping the ceiling clean and free from dust; preferably it should be lathed and plastered.

Tenth.—Keeping the barn clean and using shavings for bedding instead of straw.

Eleventh.—Being careful not to stir up the dust just before or at time of milking.

Of course, in a barn constructed entirely of cement the last four requirements can be much more easily carried out.

Mrs. Cook of the New York Commission, assures us that just as good, if not better, milk can be produced in good dairies without cheese-cloth strainers over the pail. We do not doubt but that this is so, but unless the last points can be closely followed the strainers seem necessary.

So much for the method of getting a certified milk plant started in cities where there is no such milk supply. But what are we to do for the great mass of people who can not afford to buy certified milk delivered in glass jars at an advanced price?

For the supply of cities we offer this scheme: There should be as many certified milk farms as possible, where the milk is to be put up in bottles at the farm and delivered in this way directly to the consumer. When the cities are small, like Rochester, so that the farmer can be within driving distance, the delivery wagons would start directly from the farm; in large cities would have to start from railroad stations. For those who are not able to pay a considerably advanced price for this milk, we suggest that the city have a can-sterilizing plant—not a plant for sterilizing milk, dirt and bacteria together—located near the various railroad stations where milk comes in. After delivery the cans are returned to this sterilizing plant, washed by machinery, a cheese-cloth cover put over the can, then the metal cover, and over the entire top of the can a stout canvas cover with a purse-string arrangement so that no dust can get in. These can are then slid into a sterilizer and sterilized by dry heat. The cans are then shipped back to the farms. The milkman receives his can, takes off the canvas cover, removes the metal cover and milks directly through the cheese cloth into the can. When the can is full, the cheese-cloth strainer is removed, put into a canvas bag, and subsequently returned to the city's sterilizing plant. The metallic cover is replaced on the can, and the can immediately sunk in ice water up to the neck. This can is then carried by rail to the city, and there the milk may be bottled, or the milk may be delivered directly from these cans. This milking, shipping and delivering pail or can should hold about fifteen quarts and have a small 5½-inch opening.

The cooling tank should be made so that it overflows at a level just below the cover of this can. This scheme would necessitate the farmer having as his only apparatus a plain wooden tank or trough large enough to hold all his cans and enough ice properly to cool the milk. He would not have to handle the cans at all. In fact, he must be instructed not to handle them. He would not need an expensive milk-room.

This is the application of surgical principles to the milk business. Whenever surgical instruments or dressing are handled they become infected. The efficiency of this one-can scheme was tried in November, 1905, with the following result:

We had no special pail and no quart dipper, the can was opened, a quart poured off and a sample for bacterial examination taken each time.

Five hours after milking, 461; five minutes later, no growth (somewhere under 277); ten minutes later, 242; one and one-half hours later, 200.

The milk was on the wagon all this time.

Bottle milk, the same day, contained 13,000.

As in the dilutions made, only one colony grew; it seems probable that 461 show some accidental contamination and that 200 would have been the right count with a heavier dilution.

ENTEROPTOSIS AND GASTROPTOSIS.

BY DR. CHARLES H. MINER, WILKES-BARRE, PA.

READ MAY 22, 1907.

The terms enteroptosis and splanchnoptosis signify a falling of the intestines, but they have acquired a much wider significance, and now, as generally used, signify the falling of the abdominal viscera in general. While in discussing the falling of any special organ special terms are used, as gastroptosis, the falling of the stomach; nephroptosis, of the kidney; hepatoptosis, of the liver; coloptosis, of the colon, and splenoptosis, of the spleen.

I will refer in this paper principally to gastroptosis as the symptoms complained of by patients are usually due to or associated with displacement of the stomach. These symptoms are described by Glenard, who was the first to give a careful description of enteroptosis. He says they occur in four separate conditions—nervous ailments, dyspepsia, diseases of the liver, and general constitutional illness. The symptoms are many and include an expression of sadness and depression, a complaint of feeling badly all over, loss of memory and of the power of concentrating attention, irritability, indigestion, weakness, emaciation—while no treatment of the ordinary kind seems to prove beneficial. Examination of the urine, blood and gastric juice will show them to be generally normal, but a careful physical examination will reveal tenderness in the epigastrium, marked epigastric pulsation, great diminution of the tension of the abdominal wall and a palpable cord-like transverse colon. One of the most important diagnostic tests of this condition, according to Glenard, is the belt test, *i. e.* the physician stands behind the patient, encircling the abdomen with the palms of both hands, thus supporting and lifting up the abdomen; if this affords relief the diagnosis of enteroptosis is confirmed. The fundamental and characteristic symptoms of this condition are a sensation of weakness, a feeling of discomfort in the mesogastrium, reaching its max-

imum two or three hours after dinner, aggravated by fats, starches, raw foods and milk.

ETIOLOGY.

Enteroptosis is very common in women. Stockton, Boardman Reed and others estimate it as being present in 50% of women, while Meinert states that a normal position of the stomach is the exception in the female sex.

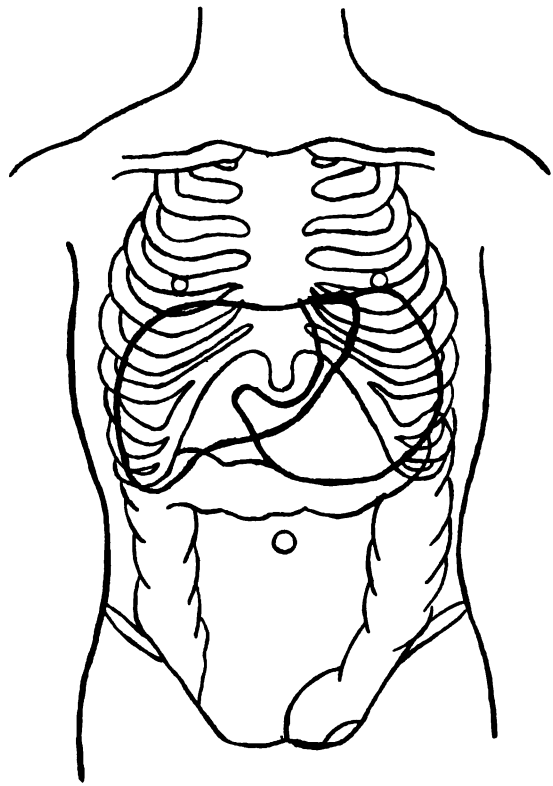

FIGURE I.
Position of normal stomach, liver and large intestine.

The question of the cause has been discussed by many writers, as Glenard, Kelling, Meinert and Landau. There are first conditions predisposing to enteroptosis, and second those directly responsible or exciting causes. Under predis-

posing causes may be mentioned hereditary predisposition and constitutional weakness; while the exciting causes as outlined by Hemmeter will be given, 1. Relaxation of the abdominal muscles, following repeated pregnancies, abdominal tumors, etc. 2. Pressure of badly fitting clothing, belts or corsets. 3. Chlorosis. 4. Nervous dyspepsia. 5. Displacement of the female genito-urinary organs. 6. Curvature of the spine. 7. Enlargement and increase in the weight of the liver.

With regard to the relative frequency of enteroptosis in the sexes, Webster states that the proportion is approximately four or five to one in favor of the female sex. It is more common in women who have borne children and in those with relaxed and pendulous abdominal walls, and in whom diastasis of the recti muscles exists. It occurs frequently, however, in young unmarried women in whom the recti muscles are closely approximated. It occurs most frequently between the years of twenty and fifty, though Hemmeter has reported three cases, two in female children of ten and twelve and one in a boy of eleven. It would seem probable that the over-loading of the stomach from too frequent and too much feeding might result in dilatation and ptosis. Among the most common exciting causes in adults are tight lacing, rapid emaciation, diseases of the abdominal integuments or anything that constricts the thorax or enlarges the capacity of the abdomen.

SYMPTOMS IN GENERAL.

There may be absolutely no symptoms associated with the condition on the one hand, while on the other hand we may have symptoms of the most aggravated type of neurasthenia, to which are added various abdominal symptoms due to displacement of the various viscera, as indigestion, constipation, pain in various portions of the abdomen, a feeling of lack of abdominal support and many others.

GASTROPTOSIS.

Gastroptosis has been less frequently recognized than floating kidney, because the ease with which the latter can be diagnosed. Yet undoubtedly, many of the symptoms which

have been ascribed to floating kidney are in reality due to an unrecognized displacement of the stomach. The symptoms of that stage of gastroptosis in which the patient most frequently consults a physician are those of gastric motor insufficiency and secondary dilatation.

DIAGNOSIS.

The diagnosis of gastroptosis may be made in several ways. In some cases simple percussion, percussion with auscultation or auscultation after the patient has been given fluids to drink, may suggest to us the position of the stomach. In other cases the absence of fullness in the epigastrium and increased fullness in the hypogastrium is suggestive, while epigastric pulsation is marked. But the only exact method to map out the stomach and especially to map out the position of the lesser curvature and the pyloric extremity is by means of inflation. The earlier method of inflation is that depending upon the liberation of carbon dioxide gas by a mixture of sodium bicarbonate and tartaric acid. I have formerly used this method and its advantage is, of course, that the stomach tube does not have to be employed, but for a thorough examination the use of the stomach tube is imperative. The air is introduced through the stomach tube, following lavage, by means of a Davidson syringe or by the bulb of an ordinary atomizer apparatus fitted with a small nozzle. After the stomach is distended, in ordinary cases it can easily be seen and palpated through the abdominal wall. As Steele says, the following signs are of great value, as a check upon inspection and palpation.

1. A high-pitched typanitic note upon percussion is obtained over the distended organ.

2. Auscultatory percussion gives the outline sharply, and since the stomach is distended and brought against the anterior wall, the tendency to error incurred when this method is practiced upon a partially collapsed stomach is avoided.

3. When the bulb of the syringe is compressed, forcing the air through the tube, a peculiar metallic ring can be heard with the stethoscope over the stomach. When the bell of the in-

strument is moved along beyond the stomach limits, the sound instantly loses its metallic character.

After the examination an important point is to allow the air to escape through the tube before it is withdrawn, to avoid distress to the patient. Recently Dr. Henry K. Pancoast has done some excellent work in the diagnosis of gastroptosis by employing the X-ray. The technique used in taking pictures was as follows: Bismuth subnitrate held in suspension in mucilage of acacia was either poured into the stomach through the stomach tube or was swallowed by the patient. Immediately after the bismuth had reached the stomach the pictures were taken, the patient being in a standing position, and the plate in contact with the anterior abdominal wall. The knowledge obtained of the shape of the stomach and the position of the pylorus were two important points made possible by skiagraphs. Mechanical difficulties in stomach drainage were recognized, especially in cases of prolapsus when the stomach bent sharply on itself. Considering the normal relations of the stomach we find its cardiac end situated beneath the seventh costal cartilage and attached to the diaphragm and suspended to the aesophagus. For these reasons the cardiac extremety is practically fixed and retains its position even when the stomach is distended or prolapsed.

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The pylorus lies opposite the first lumbar vertibra approximately midway between the top of the xiphoid cartilage and the umbilicus. The pylorus is movable within a short radius, but the next eight inches of the duodenum are firmly fastened to the spine. The stretching of the gastrohepatic ligament allows the stomach to drop from these more or less fixed points, and the weakening and stretching of the gastric wall would seem to follow prolapse.

In gastroptosis the lower curvature of the stomach is below the umbilicus, often as much as a hand's breadth, and sometimes it nearly reaches the symphysis pubis when complicated with contraction of the pylorus. This extensive displacement as illustrated in case 5, while the more usual displacements are shown in cases 1 and 2.

SYMPTOMS.

As already stated, the symptoms are usually those of gastric motor insufficiency of a mild grade consisting chiefly in distress and flatulence after meals. The work of the stomach is increased, because a greater effort is required to raise the food up to the pylorus and through it to the duodenum. When general dilatation exists, there is apt to be more retention and consequently more functional disturbance.

In these latter cases there may be severe gastric pain, nausea and vomiting and the symptoms of marked auto-intoxication. Pain in the back and lumbar regions and dragging in the abdomen are frequent symptoms. The tongue is usually coated and symptoms due to impaired circulation are frequently noted, like cold hands and feet, attacks of dizziness and vertigo. Neurasthenia may be present but gastroptosis may exist without disturbance of the nervous system.

Fleiner states, however, that changes in the form and position of the stomach may lead to the same variety of nervous disturbances as changes in the position of the uterus. According to Steele and Francine, there is no condition of the gastric contents peculiar to gastroptosis, although absence or diminution of free HCl. is the rule; in a few cases the amount was normal but hyperacidity was rare and usually occurred in cases in which general dilatation existed and in which there was a strong neurotic taint. These results are, from their analysis of 70 cases, and from further study of these cases they found that there were no characteristic changes of the blood or urine. Pain was present in the upper abdominal region in about one-half, and in the lumbar region in about one-quarter of the cases. Gastric crises described in 1864 by Dietl, in connection with nephroptosis should be mentioned. They consist in attacks of gastric tenderness and pain attended by a slight rise in temperature and transitory jaundice. Various explanations have been offered for their occurrence, probably as being brought about by a torsion of the ureter or as due to kinking of the duodenum and Stengel has suggested that they may be due to direct pressure of the kidney upon the duodenum.

NEPHROPTOSIS.

The greatest amount of study has been given to displaced kidney, but the study of the case should not stop with detection of the floating kidney, and a careful investigation as to the position of the stomach, inflating and outlining this organ should be carried out, for the symptoms are frequently due to a gastroptosis. The simple movable kidney is not a pathological condition, causes in itself no symptoms and should be completely disregarded. In the exceptional cases where Dietl's crisis has occurred, albumenuria or hematuria is present or there exists hydronephrosis, an operation should be advised. The more frequent cases in which the symptoms are due to gastroptosis (and Steele found 60.9 per cent. of his cases of gastroptosis to have movable kidney) should be treated for the relief of that condition.

HEPATOPTOSIS.

Floating liver is much less frequent and often not diagnosed. I have seen one marked case (case No. 4) which was at first thought to be a tumor of the omentum or intestines.

Important factors in maintaining the liver in its normal position are the coronary, suspensory and triangular ligaments and the inferior vena cava, but these play but a small part in comparison with the elasticity and tone of the abdominal walls, the cushion-like support of the stomach and intestines, together with the elastic traction of the lungs that maintains the vault of the diaphragm. The various suspensory ligaments must become enlongated when the liver is much displaced, and is primarily caused by the relaxation of the abdominal walls and pendulous abdomen. The liver when movable can often be replaced by a proper manipulation or at least partly so.

The symptoms are those of general enteroptosis, plus those of chronic congestion of the liver. Among them we may have respiratory disturbance and palpitation, ascites, hemorrhoids, and other symptoms of portal stasis, edema of the lower extremities, albuminuria, polyuria and purpura. Attacks of jaundice occur in many cases.

The diagnosis of floating liver is made by means of palpation

and percussion. We always find a tumor in the right side of the abdomen, with its convex surface directed forward, the outline of which can be made out by bi-manual palpation. Due to the flabby abdominal walls, the liver can be mapped out with the fissure between the two lobes, but if ascites is present the diagnosis is much more difficult. On percussion, the liver dullness, instead of beginning at the 5th rib in the mammillary line, begins at a much lower level, often as low as the costal margin, while the dulness in the back is also at a low level.

PTOSIS OF SPLEEN, PANCREAS AND COLON.

Displacement of the spleen and pancreas probably occur frequently in enteroptosis, but are seldom recognized, because they cause no symptoms and are difficult, if not impossible, to diagnose.

Prolapse of the colon is also difficult to diagnose, unless we follow Pancoast's excellent work and use the X-ray after injecting into the bowel an emulsion of bismuth in acacia. He found that the hepatic flexure was usually low down and the splenic flexure high up close to the diaphragm. The transverse colon was seldom horizontal and usually passed from right to left in an upward direction in a curve with the convexity downward. In some cases the position of the colon can be determined by pumping air through a rectal tube and distending the intestine.

The symptoms that are probably due to the displaced colon are constipation, fermentative dyspepsia, the presence of a large amount of gas in the intestines, and especially attacks of mucous colic.

PROPHYLAXIS.

In prevention of enteroptosis attention should be paid to all persons, both children and adults, during and after acute or chronic diseases associated with marked loss of weight or diminution of muscular tone, as diphtheria, typhoid fever, tuberculosis, whooping cough, etc., and one should be most careful about allowing the patients to go back to active occupations after such diseases.

It is important that obstetrical cases should not be allowed to get up too soon after delivery and in many cases an abdominal support should be provided.

We should always impress our patients with the dangers from the use of tight corsets or tight belts and advise them, if necessary, to wear the straight front corset, where the pressure is exerted upon the lower half of the abdomen. In all cases of enteroptosis with symptoms, there has been a loss of body weight, and we should keep them impressed with the necessity of holding their normal body fat.

TREATMENT.

Treatment includes, 1. Diet, rest, exercise, lavage, hydrotherapy, electricity and drugs. 2. Bandages, plasters, belts and supports of various kinds. 3. Operative treatment.

Ample nutrition is one of the most important methods of curing the condition. The diet should consist in light, easily assimilated and nourishing food. Much food at one time should not be allowed and overloading of the stomach should be absolutely interdicted. Cream, milk and raw eggs, though objected to by Glenard, are usually of great benefit, when taken between meals. In the majority of cases a simple mixed diet, nutritious and concentrated, with very little fluid with meals, will be found satisfactory.

Rest, for at least an hour after meals, flat upon the back, with clothing loosened, is an extremely useful measure. It acts, of course, by giving the stomach an opportunity to force the food into the duodenum without undue effort.

Glenard advises cold hydrotherapy, massage and static electricity. Exercises to increase the strength of the abdominal wall are important, as the very best abdominal support is strong abdominal muscles.

Lavage seems to do good, as it stimulates peristalsis and acts beneficially on the mucous membrane and muscular walls of the stomach. It should not be continued for too long a time, but it is strictly indicated in cases of dilatation in gastroptosis, causing retention. The drug that appears to affect the stomach wall most advantageously is strychnine, which is best given

in the form of nux vomica in ascending doses. The addition of a prescription to combat fermentation serves in many cases to relieve the symptoms. The drugs which will be found of most service in this particular are Dil. muriatic acid, carbolic acid, resorcin, aromatic spirits of ammonia and salicylate of bismuth.

In most cases of enteroptosis adhesive plaster should be applied or an abdominal belt ordered. I have found plaster strapping of great benefit in several cases. The plaster used is Z. O. adhesive plaster seven inches wide and as long as the circumference of the waist measure of the patient. The plaster is usually worn for a month without discomfort to the patient, who, on the contrary, feels a sense of relief by the support. If the patient objects to the plaster, then the silk abdominal supporter may be employed. It should be fitted with perineal straps and be examined by the physician to see that it fits properly. Once worn, the patient can rarely give up a belt. In all cases of gastroptosis all pressure should be applied to the lower portion of the abdomen and should act from below backward and upward. In cases of floating liver the belt may be worn higher up over the prominence caused by the liver.

Various operations have been performed for the relief of splanchnoptosis and relaxed abdominal walls. Beyea, of Philadelphia, in 1898 elevated the stomach to its normal position by plicating the gastro hepatic and gastrophrenic ligaments. Webster, of Chicago, in 1901 advised and practised the resection and suture of the recti muscles in those cases of enteroptosis and gastroptosis associated with diastasis of the recti muscles. The subsequent history reported of the patients operated upon seems to show, in some cases, that their symptoms have been permanently relieved. Gastroenterostomy in cases of obstruction at the pylorus from kinking of the stomach or tumor often give permanent results.

Case I. Male, aged thirty-one years. He had an attack of malaria three years ago in China, which was cured by taking twenty grains of quinine a day for five weeks.

For seven years patient has had indigestion with more or less

pain two or three hours after eating. He had no vomiting. Examination of the blood showed haemeglobin 90 per cent. and no malarial organisms.

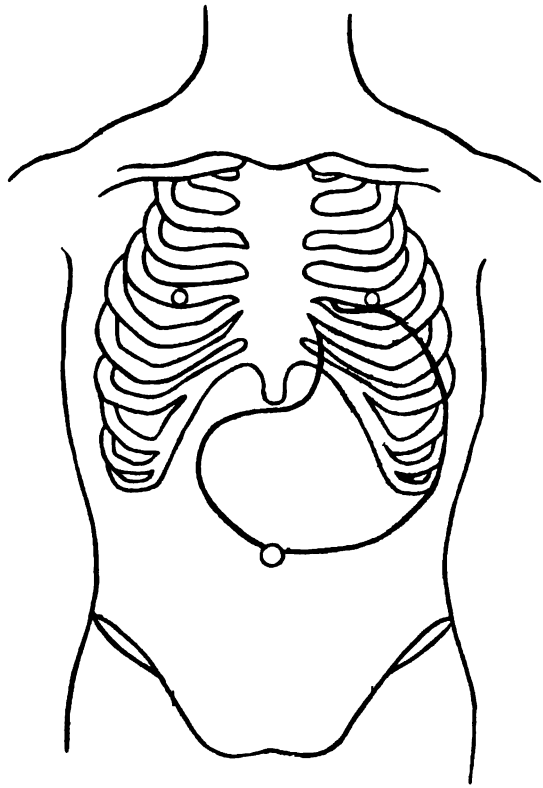

FIGURE 2. CASE I.

There was some food retained in the stomach four hours after eating a light breakfast which contained no free HCl. Lavage in the morning before breakfast found considerable fiuid and some mucus in the stomach. On inflation the stomach was found displaced and dilated with the greater curvature one inch below the umbilicus. Adhesive plaster was applied and the stomach washed out a few mornings before breakfast. He felt immediate relief and continued treatment for three months, when he declared he was permanently relieved.

CASE II. Female, aged twenty-eight years; one child. Patient has had pain in the epigastrium and gaseous eructation directly after meals for several years. She was decidedly neurotic and had been treated for uterine displacement.

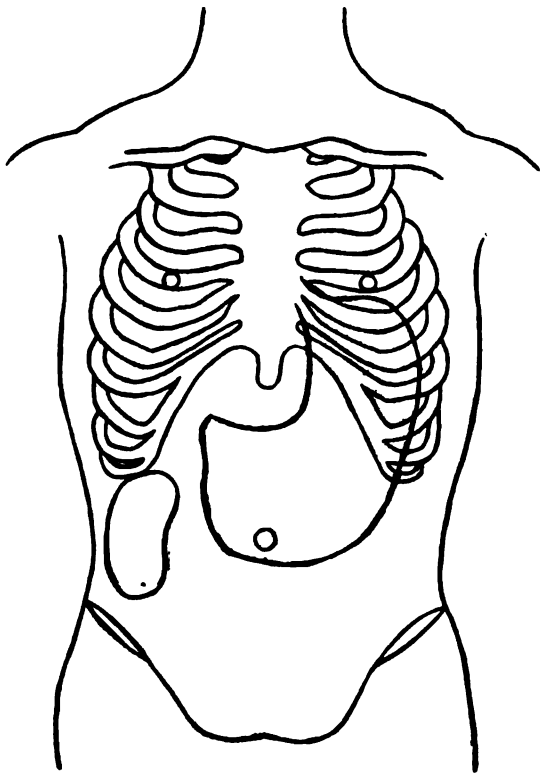

FIGURE 3. CASE II.

Examination.—Heart, lungs and urine negative. Considerable relaxation of the abdominal walls with no diastasis. Right kidney movable. Liver normal in size and position and not movable. Stomach displaced and dilated with greater curvature four inches below umbilicus. No free HCl. Patient was at first strapped and later secured a belt. She took nine glasses of milk and three raw eggs a day.

One year and a half later. The patient wore the belt steadily

during the past year and a half, and said she could not do without it. She had gained in weight and the subjective symptoms were much improved, though she was still decidedly neurasthenic.

CASE III. Male, aged fifty-five years. In 1862 the patient had ship fever, and in 1877 had intermittent fever, He has never been sick since that time until the present trouble began. About five years ago he began to be weak and short of breath. He had no appetite. Later he began to vomit undigested food Three years ago he stopped working on account of weakness. About this time he noticed that his stomach was swollen. He has had severe pain but it is less marked at present.

Examination.—Patient poorly nourished and pale. Heart, lungs and urine negative. Haemoglobin 70 per cent. Test breakfast T. A. 26; free HCl. 4. Abdominal walls were relaxed. There was considerable retention of food over night. He remained in the City Hospital one month and improved rapidly on the morning lavage and hydrochloric acid and nux vomica after meals.

CASE IV. Female, aged fifty-nine years. She has had five children and was operated on successfully ten years ago for a large cyst of one ovary. She has had a cough at different times during the last fifteen years and has had symptoms of indigestion for twenty years. Three months ago had an attack of pleurisy with effusion in the left pleura. The pleura was aspirated twice and a pint of bloody serum removed each time. After many examinations a few tubercle bacilli were found in one specimen of her sputum.

On examination, an old infiltration of the apex of the right lung was found. There was a mitral systolic murmur at the apex of the heart. The urine examination showed specific gravity 1020 with a small quantity of albumen and a few hyaline casts. In the abdomen a large mass was found on the right side which extended five inches below the margin of the ribs in the parasternal line on the right side and four inches below the margin of the ribs in the parasternal line on the left side.

It also extends four and one-fourth inches to the left of the umbilicus. Dullness was found over this area and one and a

FIG. 4, CASE III.

half inches above the margin of the ribs on the right side. The stomach was found to be displaced and dilated with the greater curvature two inches below the umbilicus. Dr. Osler saw the patient in consultation and diagnosed a

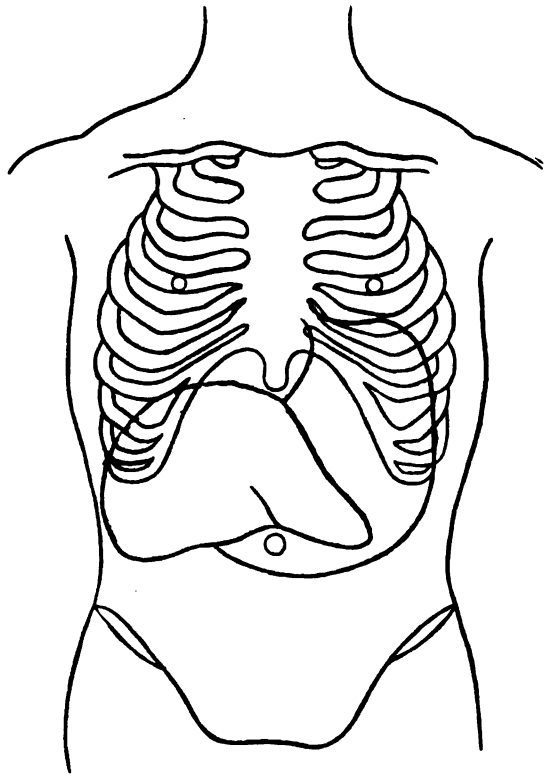

FIGURE 5. CASE IV.

floating liver and pointed out that the fissure between the lobes could be felt plainly at the umbilicus. He advised the use of an abdominal bandage and Addison's pill of mercury, squills and digitalis, with a diet and life out of doors. The patient improved steadily and lived four years in comfort, until the kidney condition caused a fatal termination.

CASE V. Female, aged twenty-five years. Born in Austria. She has given birth to one full term child and has had indigestion for many years. For the past two months she complains of pain in the right mesogastrium and irritable stomach. She

vomits almost immediately after taking food. Appetite is good, bowels regular.

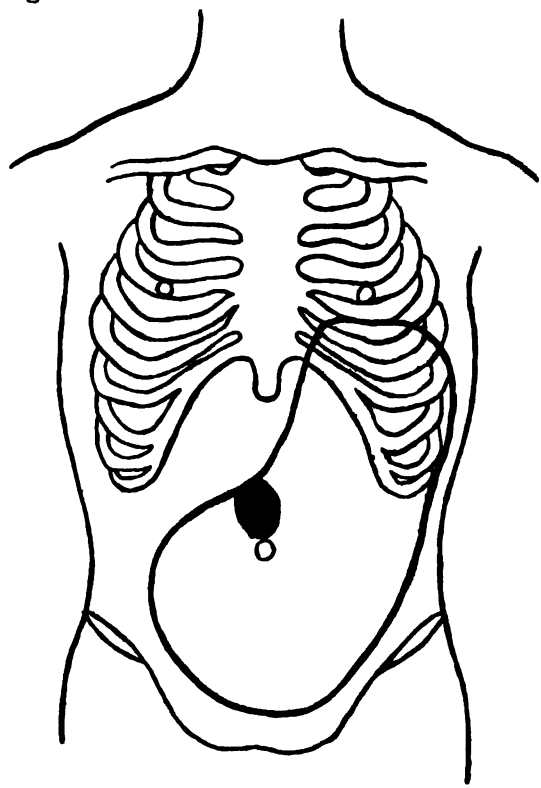

FIGURE 6. CASE V.

Examination.—Heart, lungs and urine normal. There is a mass in the central abdominal region about the size of an orange which is very movable. There is marked relaxation of the abdominal walls. The mass, when palpated, disppears to reappear again in a minute.

After inflation through a tube the stomach seemed to fill the whole abdomen and the lower border extended as low as the symphysis pubis. An attempt was made to suspend the stomach surgically, which failed. She died in a few months from obstruction of the pyloris. At autopsy a large tumor was found at the pyloris, which proved to be a rare benign growth—a fibromyoma.

References.—Gastroptosis, by Dr. J. Dutton Steele and Dr. Albert P. Francine. Enteroptosis, by Dr. Thomas R. Brown.

PUERPERAL SEPTICEMIA.

BY DR. J. T. HOWELL, WILKES-BARRE, PA.

READ JUNE 12, 1907.

No symptom is more dreaded by the obstetrician than a chill, high temperature and rapid pulse following labor; it is an indication that something abnormal is taking place in our patient.

"If these symptoms are due to putrid intoxication, early curettement with uterine irrigation will give prompt relief. In streptococcus infection the germs are embedded in the mucous membranes, and walls of the uterus, so that curettement would not accomplish their complete removal but would affort more surface for absorption."

It is often a question as to the cause of this condition; with the present knowledge of sepsis and the care that is taken of the patient we should not have any cases of puerperal septicemia. But is it at all times for the want of proper care that sepsis follows?

I can recall several cases of septicemia, where all possible precautions were taken, the surroundings and environments apparently perfect, yet patients developed sepsis but happily recovered. How often is it that the surroundings are anything but sanitary, and with many misgivings for the welfare of the patient, even in instrumenal interference, hard, difficult and often prolonged labors, the patient goes through her puerperium without a symptom. It is often a mystery how the patient has absorbed the poison, yet there must be some cause for the septic condition, whether it is due to the condition of the patient before labor or the poison is introduced by innoculation, either by unclean hands or instruments.

In the early years of my professional career, before the days of the use of bichloride, carbolic acid was freely used as an antiseptic. Is it due to the use of bichloride that we do not have the epidemics and frightful mortality following labor, that we read about in our text-books when it was often a question as to the source of the poison? It must be very grat-

ifying to a physician never to have had the misfortune to loose a patient with puerperal septicemia. I regret to say that during my more than a quarter of a century in the practice of general medicine, that my mortality amounts to six cases, and I believe with the present knowledge of sepsis, that were some of the cases to occur at the present time, the mortality would not be so large.

The first case occurred in 1883. The patient, a primipara, who had a hard and prolonged instrumental delivery with ruptured perineum, sepsis no doubt being due to absorbtion through the lacerated and contused parts. The last case occurred in 1904. The patient, a multipara, attended by a midwife. I was called the second day after confinement and found the patient suffering with a chill, temperature 104, pulse 140. My prognosis at the time was unfavorable. With symptomatic treatment the temperature reached normal the ninth and tenth days, and we had every reasonable hope to expect a speedy convalescence, but were doomed to disappointment, and from that time on the poison seemed to be more virulent, resisting all kinds of treatment, death occurring on the thirtieth day. This labor was perfectly normal and the only explanation for the septic condition was, that the patient, on the second day walked about thirty feet and used the toilet in the bath-room, which was not in a very sanitary condition.

The obstetrician of to-day is better qualified to attend cases of labor. He is more than careful not to introduce any septic material into the vaginal vault. Notwithstanding oftentimes the unsanitary surroundings he realizes the danger of negligence in not having the field of operation clean, and, if the patient develops an abnormal condition following labor, he will seek the cause and if there is any retained decidua or broken down blood clots in the uterus he will remove them either with the curette or uterine douche.

It has always been a matter of serious importance to me, leaving a case after labor, whether the uterus does not relax and retain a certain amount of hemorrhage; it is this retained blood that often gives rise to the grave condition

of sepsis and causes putrid intoxication. I do not believe that any one would leave a woman with a part of the placenta in the uterus. The very fact of knowing the serious consequences in allowing it to be retained would make the obstetrician most cautious. I can very well remember the very first case of labor I attended, while hospital resident in 1880, where the woman had a complete adherent placenta and I was obliged to separate and peel it off from the uterine walls. The patient made a good and uneventful recovery and is living to-day; nor did I consider the great danger involved in the procedure, but having a similar case, years later, it caused me considerable anxiety in having the patient get well without any septic complications, using at the time all possible precautions so as not to infect the woman in removing the placenta.

In healthy women the uterus is very tolerant, and it is a good symptom to have the uterus contract spasmodically, as it closes the mouth of the vessels at the placental wound and prevents the poisoned material from being conveyed into the general circulation, which is one and the chief cause of septicemia.

I recall a case where the woman, after confinement, complained of a very offensive odor, occurring at stated intervals. On examination, per vagina, it was not perceptible, but in dilating the cervix, a large amount of foul smelling pus escaped, which no doubt was the result of broken down clots retained in the uterine cavity; irrigating the uterus with an antiseptic solution the patient had no further trouble from that source.

How are we to prevent our patients from being infected? In private practice the physician is not always consulted about the arrangements to be made for the welfare of the expectant mother, so it is incumbent on him to have the field of operation as clean as circumstances will permit. Most families have clean laundried sheets; by placing newspapers between the folds of the sheet, so as to make a pad, placing the pad past the edge of the bed, and fastening it to the mat-

ress you will not only keep the rest of the linen clean, but will save the mother much unnecessary handling after delivery.

It is not within the province of this short paper to mention the sterilizing of the hands and instruments, or in making a vaginal examination to have a bichloride solution to be used whenever such examinations are made. After delivery, repair all lacerations, express the placenta by the Crede method, if possible, cleansing the woman's vulva and adjacent parts freely by the use of a bichloride solution and place a sterile pad to the vulva. Should the woman subsequently develop a septic condition, that is, to have a chill, high temperature, rapid pulse, I think it is the duty of the attending physician to use the dull curette, and if it is a case of putrid intoxication the curette will bring away a large amount of decomposed tissue, and by thoroughly irrigating the uterine cavity with a large amount of an antiseptic solution, the patient's condition will become normal and remain so during convalesence. If it is a case of streptococcus infection the curettment need not be so effectual, as there will not be so much material to remove and there cannot be any harm following this operation. By this mode of treatment we will also be able to differentiate between the two poisons. The treatment of puerperal septicemia with antistreptococcic serum was first used by Marmorek in 1895. At that time he reported sixteen cases of streptococcic infection and all recovered. Later investigations of the use of serum have been very disappointing and it has been generally rejected as useless. My experience with the use of the serum has been limited. I used two injections of ten cubic centimeters in the fatal case occurring in 1904. It was used in the later stage of the disease and not much benefit was derived from it. Should I have the misfortune to treat another case of streptococcic infection. I would use it early and repeat the dose, if the temperature remained high.

During the disease the patient must be given a nourishing and an easily assimilated diet. Cold water sponging to re-

duce the high temperature. Tonics and stimulants to sustain the patient's strength.

There is no death that brings with it so much sorrow to a home as the loss of a mother, and none that makes the physician realize more keenly the limitations of human skill.

THE MEDICAL INSPECTION OF SCHOOLS.

BY DR. ALLAN C. BROOKS, WILKES-BARRE, PA.

READ SEPTEMBER 11, 1907.

The vacation period is over. The teachers' institute has been held and many newer methods of instruction have been advanced. The law of the state compelling the children of the commonwealth to attend school is enforced. Truant officers are bringing up the rear guard of those who much prefer the public play grounds to the mental gymnastics they receive at school.

The children assemble from all classes of society, from the homes of the rich and the poor, and out of this interesting assembly are to come the citizens of the state in the future. The state does right in insisting that these children should be educated, but the state should go a step farther and see that her future citizens are developing into strong physical bodies as well as along intellectual lines. The medical inspection of schools should be classified as a form of preventive medicine. And in this paper I shall attempt to support the proposition that by a well-regulated medicinal inspection of public schools we are advancing one phase of preventive medicine, and that only good can result therefrom.

HISTORY OF MEDICAL INSPECTION.

The history of medical inspection dates back to the beginning of the nineteenth century and its birthplace was Europe. In 1833, 1837 and 1842, laws were passed in France relating to school physicians and school hygiene. But the laws were

defective and not much good was accomplished until the system was reorganized in Paris in 1878, and placed upon its present basis in 1884. Since that time the schools of Paris have been divided into districts, of from fifteen to twenty school-rooms, and a physician appointed for each district with an annual salary of eight hundred francs.

Belgium has had medical inspection of schools for twenty-nine years; Egypt twenty-five years; besides it has been in vogue for a long time in Sweden, Switzerland, Germany, Austria, Hungary, Holland, Servia, Roumania, Russia, Portugal, Spain, Japan, Argentine Republic, England, Scotland and in 1903, Canada.

In Germany the system varies a good deal in different cities, but the government has recommended that of Wiesbaden for general adoption. There the school physician makes a physical examination of all new pupils; visits the class-room under his charge from ten A. M. to noon once a fortnight or oftener, if necessary. Each pupil is weighed and measured periodically by the class teacher and a record made of the child's health card twice a year.

In Great Britain, such cities as London, Edinburg, Bradford, Leeds, Sheffield, Bristol, Hull, Birmingham, and many others, have appointed medical inspectors. Even Japan came to the front and inaugurated this system in 1893, a year before Boston, the first American city, adopted this system. And it took a severe epidemic of diphtheria in the Boston schools in 1894 to inaugurate medical inspection of schools in America. Brookline soon followed Boston's example. In 1895 Chicago adopted it and in 1897 New York. Since then many other American cities have fallen in line with this advance movement of preventive medicine. Philadelphia, Newton, Mass., St. Louis, Fall River, Mass., Washington, D. C., Orange, N. J., Atlantic City, Asbury Park, Milwaukee, Minneapolis, Salt Lake City, Cleveland, Hartford, Conn., Cambridge, Mass., Providence, R. I., San Francisco and Los Angeles, all have medical inspection of schools.

METHOD OF INSPECTION.

As in all new movements, the method employed to reach results differ in details in different cities. In Boston, the city is divided into districts of about 1400 children and an inspector employed for each district, who receives a salary of $200 per year. The inspector visits each school daily, early in the morning, and examines all pupils whom the teachers think ailing, and if anyone is found too ill to remain in school from any cause, he is sent home for the observation and care of his parents and family physician. If the illness is contagious, the child is *ordered* home and the case is reported to the Board of Health. Dr. Charles Harman reports: "The method employed in New York city has been radically changed and is now more complete and satisfactory than that formerly employed. The physician, beside examining such pupils as the teacher may report ill for that day, also visits the class-room himself once a week and examines each pupil. This examination is not a thorough one, but as almost all the acute exanthems and the contagious affection of the eyes and the skin have typical manifestations on the head, face, hands or the mouth or throat, the examination is sufficient to detect any such disease. The visit to the class-room also gives the inspector an opportunity to instruct the teacher and demonstrate to her those symptoms which are to be especially noted in order that she may be able to select those who are to be sent to the physician at the daily examinations." In the lower end of New York, nurses are also appointed and those children who have impetigo contagiosa, acute conjuntivits or parasitic disease of the scalp are treated by the nurses if the parents are indifferent to the welfare of their offspring. The nurse also often visiting the child's home and instructing the mother how to effect a cure. The object being that the child may lose the least possible time at school.

THE DUTIES OF MEDICAL INSPECTOR.

These vary in different cities and are dependent at present upon the local school board controlling the system. But all have the following main points:

(1) The contagious diseases are always sought and when found the principal fills out an appropriate blank to the parent and immediately sends the child home to be excluded until cured. The inspector notifies the health department if it is a notifiable disease.

(2) If a non-transmissible disease is discovered a similar note is sent home with the child advising consultations with the family physician. In all cases it is the principal of the school who sends the child home and writes the notes.

(3) Detecting physical defects of the organs of special sense, especially of sight and hearing. Out of 17,245 children examined in London in 1902, 18% were found to have serious visual defects. In New York 76 out of 570 children showed more or less serious impairment of hearing.

THE NECESSITY FOR MEDICAL INSPECTION.

Is an epidemic necessary in order to convince a community of the necessity for medical inspection of our schools? Sometimes it is. In Boston the mayor and council made an appropriation for medical inspection two years before it was started. But an epidemic of diphtheria visited Boston in 1894 and medical inspection of schools was started in America. The inspectors in Boston sent home 73 children that first year ill with diphtheria and attending school. By sending home these 73 children may I ask how many cases of diphtheria were prevented by the medical inspections? In Germany it was an epidemic of measles that started medical inspection of schools. Public meetings were held at Berlin and resolutions were passed stating that laymen and physicians demanded that each school have a physician assigned to it to have charge of the general hygiene of the building and be watchful over the health of the scholars. To quote from the

Medical Magazine, England: "How many times, to take an almost every day example, does not one hear the distressing complaint that the child had never had a day's illness until it went to school, and scarcely had it started school life before it got one infectious disease after the other. Some parents have a positive dread of sending children to school at all on this account, and one can not wonder at it, for the control exercised in those competent to act is practically nil."

DOES MEDICAL INSPECTION OF SCHOOLS PAY?

The value of medical inspection shows itself along numerous lines effecting the condition, nor only of the child, but also of the teacher, the parent and the community at large. Chicago found, after the first year of school inspections, that in diphtheria and scarlet fever alone there were 2953 less cases of these diseases than the previous year before medical inspection, and 353 lives saved. 353 lives saved within one year would well repay all moneys spent on Chicago's medical inspectors. New York City sent inspectors to its schools for the first, March 29, 1897. That first day the inspectors found 14 cases of diphtheria, 3 of measles, 1 of scerlet fever, 35 contagious eye diseases, 3 mumps, one croup, 8 chicken-pox, 8 skin disease, 67 parasitic disease, in all 140 children excluded the first day. In Boston in 1902 there were found 1040 children having dangerous communicable diseases. I wish to emphasize the fact that the children suffering from these communicable diseases were in regular school attendance at the time. Statistics of other cities go to prove that many cases of contagious diseases exist in our schools and medical inspection has been proven to protect against epidemic arising among school children, to prevent the infection of others, and to prevent the spread of contagious diseases. Previous to the establishment of New York's system of medical inspection, epidemics or diphtheria, scarlet fever and measles were frequent and severe. Investigation showed that many children were allowed to attend school before peeling had ceased. Many mild cases were not reported at all, were never seen by a physician and children

from the infected households attended school without any hindrance. The feature of medical inspection capable of demonstrating its practical utility in the most striking way and the feature which appeals most strongly to the general public, without doubt is that relating to the detection of contagious diseases, but there is no branch of this subject so thoroughly charged with the *possibilities* of good as that relating to the discovery and intelligent direction of the physically unfit. It is a truism that much of disease, pauperism, and crime appearing in after years is due to influences operating during the period of school life and much of it can be avoided by the early discovery and proper care of physical defects. A child physically defective so that he cannot succeed well with his studies and gets behind his classes grows to dislike school and becomes a truant. It would be better to prevent dislike for school and truancy than to have truant officers and reformatories. The cost of a system of medical inspection would be more than saved in the lessened cost of the care of adult criminal dependents. It is better to see that no child blindly suffers from a defect which can be cured than to wait until a criminal is made and then try to reform him. I do not claim that medical inspection of schools is the one sure way to solve these problems, but I do claim it is a step in the right direction of dealing with them rationally. It may be the medical inspector of the future will not be the general practicing physician as is most common now. It may be as the services of the inspector are realized the duties will broaden and a full fledged specialist will develop. That the fee of $200 per year is rather uninviting for a spcialist is perhaps one reason why this branch of preventive medicine has not been specialized before. Can it be that only our large cities need medical inspection of schools? Does a parent in Wilkes-Barre ever fail to call a physician when his child has scarlet fever or measles, either because he does not recognize his child is sick or because he does not want a sign tacked on the house and the disease reported?

Does the sanitary committee detect all cases of contagious diseases? If we can answer these questions in the affirmative we do not need medical inspection of schools. But children are without doubt attending our public schools that are sick with contagious diseases in mild forms, that have spinal curvatures needing correction, that have defective eyes and hearing, many of which could be remedied. Dr. W. W. Keen said that "It is the duty of the state not only to educate its children but also to protect their health. You all know how well that at the hotel or boarding house if a case of scarlet fever or diphtheria breaks out the place is deserted in 48 hours, unless the child is taken away. And yet right in the midst of our schools a case of scarlet fever may exist or a case of diphtheria break out and all the children in the school are exposed to it. This is not right and ought not to be." We should not require, nay compel, our children to attend school and neglect all the safe guards and prudence that caution may suggest, or as W. H. MacKenzie, M. D., medical inspector of the local government of Scotland, says, "It cannot be right to compel children to attend school and wrong to make it possible for them to learn. It cannot be right to force their brains and wrong to correct their bodies. It cannot at one and the same time be right to compel the education of children and to perpetuate conditions of disease. It cannot be right to attempt the education of eye and ear when these are already known to be defective. It is absurd even from the educational standpoint, which is the primary concern of the state, to work these defective organs, chief feeders of the brain, as if their defects were indifferent. If a child is backward from defective vision, the remedy is to rectify the defect. If he falls behind because his ear drum is perforated he should at least be examined that his progress should not grow slower. If the brain is inactive from defective circulation it is at least worth ascertaining whether the cause be want of food or congenital heart disease or bad home conditions or the supervention of some acute disease or of unhealthful conditions that will end in acute diseases."

But why quote more authorities. The value of school inspection has been proven in our large cities and our smaller cities and towns must soon fall in line. Already the literature on this subject has assumed an important part in preventive medicine. Its cost is inconsiderable and the compensation physicians receive for this work should be greater when we consider the good accomplished. Experience shows that the system does not, as many have supposed, interfere with the family physician, or with the duties of the teacher, or with discipline, or in any way with the school routine. The objections have all been proven groundless by the experience in the cities where medical inspection is practiced.

With an enrollment of 10,000 school children in Wilkes-Barre we need better protection than our present antiquated sanitary committee can give. The school board should know first handed all cases of contagious diseases in our schools and eight or ten inspectors doing systematic work would put a safe guard about our school children that cannot be done by even the efficient and much over-worked school board. Every citizen of Wilkes-Barre is proud of the noble work the local school board has done in the past, especially the part taken by the doctors represented on our school board, and I trust that soon to our sanitary school houses and efficient corps of instructors may be added an adequate medical inspection of schools in Wilkes-Barre, and Luzerne county.

THE CLINICAL SIGNIFICANCE OF SMALL HEMORRHAGES FROM THE GASTRO-INTESTINAL TRACT,

BY DR. J. DUTTON STEELE, OF PHILADELPHIA, PA.

READ OCTOBER 9, 1907.

There is no doubt that the detection of minute hemorrhages from the gastro-intestinal tract by chemical means has become a symptom of acknowledged importance in the detection of gastro-intestinal disease. During the three years that have passed since Boas called attention to the fact that we were missing a valuable means of diagnosis by neglecting Weber's test for blood in the stools, the subject has been considered in many papers and many series of observations have been recorded.

The opinion was frequently expressed at the recent meeting of the American Medical Association that the detection of occult bleeding is, in spite of exceptions, the most valuable single clinical symptom recently developed for the detection of latent cancer or ulcer. And now perhaps there is danger of accepting occult blood as a sign of cancer or ulcer too enthusiastically without recognizing the difficulty of correctly interpreting the source of the bleeding.

I can heartily support Ewald's statement when he says that instead of making gastro-intestinal diagnosis easier by making the search for occult bleeding a matter of clinical routine, we have really made it harder. This does not attack the value of the test but means that we have added a symptom to our aramentarium which is very useful when correctly interpreted but can be very misleading if care is not taken to give it its true value. Still, if we can exclude bleeding from the mouth and rectum, then the presence of occult blood in the stools is always a danger signal and we should not rest until we have used every means in our power to discover its source.

OCCULT BLOOD IN THE DIAGNOSIS OF GASTRIC ULCER.

By the use of the Weber test and its various modifications, we have changed the significance of blood in the stool

from a sign that gastric ulceration has reached a stage of danger, into a means of diagnosis that is available in the quiescent stages of ulcer. By its help we can detect latent ulcer, can predict the occurrence of relapse in cases in which the ulcer is apparently healed, and can watch the effect of diet and remedies.

In the diagnosis of ulcer we must remember that a quiescent peptic ulcer does not bleed as much as we might expect it to do, and unless we make routine and frequent examinations we will not detect occult blood. Conversely in doubtful cases we cannot exclude ulcer unless we watch the stools for at least a week, and if the question is as to the presence of chronic indurated ulcer, for a month. But when we have the evidence that such patient search will give, it is correspondingly valuable.

Personally I have found the test for occult blood most valuable in differentiating between ulcer and the hyperaesthesia of the stomach that one sees so frequently in young neurotic girls. The age and sex of the patient, the uncertainty that a hysterical tendency gives to the patent's statements, especially as to the vomiting of blood, the frequent occurrence of anemia in both conditions, the pain on taking the food and the tenderness in both often makes it extremely difficult to decide with which condition one is dealing.

In such cases the continued absence of blood from the stomach contents and from the stools is a great help in diagnosis and personally I have never known a case in which blood was persistently absent from the stools for several weeks in which any of the typical symptoms of ulcer developed later. I will not say, however, that absence of bleeding for even that length of time will surely exclude ulcer. But certainly it is strong evidence against it.

OCCULT BLOOD IN THE DIAGNOSIS OF CANCER.

The rule which has been generally received, which I have referred to in a former paper, is, that occult bleeding occurs in every stool in ulcerated cancer. We find on further study that this statement needs revision. While it is undoubtedly

true that bleeding from ulcerated cancers occurs much more frequently than from peptic ulcers, still cases have been noted by Ewald, as well as by myself, in which the bleeding from cancer was intermittent and even absent for a considerable number of days.

I have had the opportunity of observing several cases of this sort in the wards of the University Hospital in the service of Dr. Stengel. One patient was a woman of 30 years, who came in with undoubted signs of pyloric obstruction, absence of HCl, a tumor of the pylorus, loss of weight, cachexia and later a metastatic nodule at the umbilicus. Once during the first ten days that she was under observation her vomitus showed occult blood; on the other hand, two test meals and four stools examined in that period showed no blood. Then there were two stools containing blood and then she underwent an operation which showed cancer of the pylorus and lesser curvature.

Another case was an old woman with pyloric tumor, pyloric obstruction, and cachexia who never showed occult blood. The mass was almost certainly cancer, but unfortunately we could not verify the diagnosis.

Ewald has had the same experience and says that occult bleeding occurs in the majority but not in all cases of cancer and often does not appear until other unmistakable symptoms are present; that is bleeding does not take place until the tumor has ulcerated, and this does not always occur.

The value of continued negative examinations in excluding cancer is shown by the following case, also from Dr. Stengel's service:—A woman 69 years of age had an oval hard tumor in the right upper quadrant of her abdomen. The mass was freely movable, moved with repsiration and did not seem to be directly connected with the liver. It lay about where the hepatic flexure of the colon should be, and its position suggested a tumor of the transverse colon rather than one of the gall bladder or pylorus. HCl was absent. The loss of weight and cachexia indicated malignant disease. However, the persistent absence of occult blood from the

stools was against cancer of the gastro intestinal tract. Operation showed that the mass was a carcinoma of the gall bladder not involving the common or hepatic duct or the bowel.

Another case showing the value of the continued absence of occult blood in excluding cancer is as follows: (This case occurred in the service of Dr. Musser, University Hospital.)

Man, aged 50, an undoubtful history of ulcer and vomiting of blood at intervals for 20 years. When he came under observation there were plain signs of dilatation of the stomach from pyloric obstructional visible peristalsis; copious vomiting and a tumor of the pylorus. There was continuous hypersecretion but not hyperacidity. His emaciation was extreme. Haem. 20. The question to be decided was—had a carcinoma developed in the floor of the old ulcer. Continued absence of blood over a period of six weeks was against this diagnosis. Autopsy showed pyloric stenosis from cicatrical contraction of an old ulcer. This case is interesting also because it is an instance of benign pyloric stenosis without bleeding. Hartman found small hemorrhages frequently in the stools of nonmalignant pyloric obstruction. Recently Coplin threw some light upon this question when he showed a specimen before the Philadelphia Pathological Society in which there was a fibrous stenosis of the pylorus. Blood had been demonstrated in the stools and at the autopsy the source of the bleeding was found to be numerous erosions near the pylorus which were not ulcers. These were probably produced by the violent action of the stomach walls in attempting to overcome the obstruction.

THE THERAPEUTIC USES OF THE TEST FOR OCCULT BLEEDING.

Further study of the significance of occult blood reveals many ways in which the routine examination for it may be of help in diagnosis and therapeutics. Thus we can determine the propriety of passing the stomach tube in case of suspected ulcer by the presence or absence of blood in the stool. Larger hemorrhage may be predicted and prevented by finding that occult bleeding is increasing in frequency and amount in

a case of gastric ulcer. I have seen a typical case of this sort: A woman had had frequent attacks of hematemesis some two months before coming under observation. Her stools were free of blood for two months, and she was improving in weight, and strength when she began to complain of precursory symptoms of internal hemorrhage, namely. flushing, internal restlessness and pain and tenderness in the epigastrium. A clear reaction for occult blood was obtained in the feces for several days. She was put at rest in bed upon a milk diet. Her symptoms subsided and in a few days her stools were free from blood. It seems probable that this case was saved from serious hemorrhages by the routine examination for occult blood and prompt treatment.

An almost exactly parallel case is reported by Ewald:

The test for occult blood can be used to control and determine the length of the various periods of medical treatment of ulcer. As a rule, bleeding should stop within a week after the patient is placed on a milk diet and rest in bed. As soon as blood disappears from the stools, provided the other symptoms are favorable, the diet may be increased. If bleeding recurs during the period of increase in diet, it indicates that the change is being made too rapidly. Persistent recurrence of hemorrhage, when the change from liquid to solid food has been tried a number of times, would indicate that the ulcer will not heal with medical treatment, and that surgical intervention is required.

Another prophylactic use of the test is to watch cases of ulcer that are apparently cured, in order that signs of impending relapse may be detected and recurrence prevented. Boas advises the routine examination of the stools of such persons at intervals for some months until the continued absence of blood shows complete healing. He says that by preventing the hemorrhage and relapses, our chances of permanently curing ulcer by medical treatment will be much increased.

PERSISTENCE OF BLEEDING DURING AN ULCER CURE.

A point in regard to occult bleeding concerning which we need more definite information is the significance of con-

tinued bleeding after the patient has been put on a milk diet for some days or weeks. The persistence of bleeding under these circumstances, would seem to be, and probably is, a bad prognostic sign. Boas says that in his experience, it means the development of a cancer in the floor of an ulcer. Billings said in the Boston discussion that he always considered persistence of bleeding beyond a reasonable time a sign that ulcer was chronic, and surgical intervention was indicated.

Personally, I have not seen enough of such cases to express an opinion. The following case, however, would seem to indicate that recurrent hemorrhage upon the milk diet does not always mean that cancer is developing or that the ulcer will not yield to medical treatment.

Female, white, aged 40 years. The patient had had four attacks of vomiting and blood in the stools during the last four months; anaemia was extreme; epigastrium pain and tenderness were present. During the first period, lasting eight days, with rectal feeding, three positive tests for occult blood were made. In the second period, lasting fifteen days, raw eggs and milk were given by mouth; five positive tests were made, the last on the last day of the period; namely 23 days after the cure was commenced. There was great improvement in the blood and nutrition, and finally, complete recovery. There has been no recurrence in eighteen months. Here was a case in which bleeding persisted for twenty-three days and yet medical treatment effected a cure.

Ewald says in this connection, that it seems probable a priori that a malignant process which does not tend of itself to healing (cancer) would cause persistence of symptoms in a benign process that has of itself naturally a tendency to heal (peptic ulecr). However, he quotes a case very similar to the one to which I have just referred, when persistence of bleeding on a milk diet for twenty-seven days was taken as an indication that malignant change had set in. However, operation showed a callous ulcer that was not malignant. This supports the opinion of Billings, just quoted,

rather than that of Boas, that such recurrent hemorrhage indicates ulcer carcinomatosum.

Among the conditions which give rise to hemorrhage from the bowel and which therefore may be confused with ulcer or cancer of the gastro-intestinal tract, are hemorrhoids situated high up in the rectum, tuberculosis of the intestine, purpera, and other septic cases; but here the clinical picture of the disease should prevent error. Probably the condition that is most likely to cause confusion is cirrhosis of the liver.

The reasons why such confusion should arise are that bleeding visible or occult is a prominent symptom of both ulcer and cirrhosis and in certain forms of both conditions there are no other decided symptoms, except bleeding. Thus in cirrhosis when deep collateral circulation is well established there are often no systemic symptoms except indefinite manifestation of dyspepsia, and most of the characteristic objective signs, such as enlarged spleen, ascites and abdominal varices, are also wanting. Under such circumstances the only symptoms are occasional occult or massive gastro-intestinal hemorrhages.

Latent or quiescent gastric and duodenal ulcer as well, often manifest themselves suddenly by hemorrhage and in no other way. Thus the diagnosis between cirrhosis and latent ulcer may be extremely difficult.

I have reported a case with fairly distinct signs of duodenal ulcer in which the bleeding was extreme and was probably responsible for the patient's death. An operation undertaken as a last resort to stop the bleeding, showed a duodenal ulcer but also an advanced atrophic cirrhosis, with very good deep collateral circulation. There were no signs of portal obstruction, unless the profuse hemorrhage from the ulcer could have been so considered.

Ewald reports a similar case in which the massive hemorrhage was heralded by occult bleeding.

I may summarize my remarks as follows:—

1. Gastric ulcer does not bleed as often as we might expect. Consequently blood appears in the stools intermit-

tently and may be absent for several days at a time, or even longer in chronic indurated ulcers. Therefore, in doubtful cases the stools must be examined routinely for several weeks before a chronic ulcer can be excluded. Probably the test for blood is of most value in differentiating between ulcer and hyperaesthesia of the stomach, the result of a sensory neurosis.

2. The detection of small hemorrhages may be of considerable aid in prognosis or in the conduct of the treatment, for example, in determining the advisibility of passing the stomach tube in cases of suspected ulcer.

2. In watching the effect of a change of diet during an ulcer cure.

3. In watching a case of convalescent ulcer in order to foretell and prevent a relapse or a recurrence of serious hemorrhage. When bleeding persists after the patient is put at rest and on a milk diet it may signify that the ulcer is chronic and will not yield to medical treatment, or possibly that a cancerous process is developing on the floor of the ulcer. Small hemorrhages are more frequent in ulcerated cancer than in peptic ulcer.

4. In cancer as a rule the bleeding is almost constant and blood is found in the majority of the stools. However, cases of cancer do occur in which bleeding may be infrequent or absent for some days although there is every reason to suppose that ulceration has taken place. Its continued absence on the other hand is strongly against the existence of carcinoma.

5. Conditions that may give rise to small gastro-intestinal hemorrhages and simulate ulcer, are high hemorrhoids, tubercular entero-colitis, purpura and septic conditions, but especially cases of cirrhosis of the liver with well established deep collateral circulation.

MYASTHENIA GRAVIS.

BY DR. A. B. SMITH, WYOMING, PA.

READ OCTOBER 23, 1907.

The selection of this pathological condition has not been made on account of its frequency of occurrence, but rather on account of rarity and the complexity of its symptoms. While the condition has not until very recently been considered an enity in itself, yet the symptoms complex have been reported from time to time as representative of other conditions in which the characteristic symptoms of this disease were mainfest and was considered a peculiar type or modification of the disease suspected.

The literature upon this subject is rather limited, therefore, I trust you will pardon any errors of omission or commission that may result from a study of this disease.

I am greatly indebted to Dr. Henry Hun of New York, Prof. Wm. Pickett, deceased, of Philadelphia, and Dr. E. U. Buckman of Wilkes-Barre, Pa., for much of the information on the subject I am about to present to you.

As early as 1685, Dr. Willis of London, reported a case of apparent bulbar paralysis without a discoverable lesion in the medulla, in which he gives a description which can hardly be other than myasthenia gravis.

More than a quarter of a century ago, a group of nervous symptoms was being slowly differentiated and was commencing a struggle for recognition as a clinical entity and for a name which was finally culminated in myasthenia gravis.

This differentiation was first attempted by Erb, in 1879, although Wilks had published a paper on cerebritis, in which he recorded a case of apparent bulbar paralysis without discoverable lesions in the medulla. Erb's paper was entitled "Clinical Observations on Bulbar Paralysis," and under the subheading "On a new, probably bulbar group, of symptoms," he described three cases in which the principal symptoms were, ptosis, weakness of the neck muscle, so that the head hung forward; weakness of the muscles of the jaw, so that

mastication was difficult; disturbance of speech and deglutition and weakness of the extremities. There was no muscular atrophy and no electrical reaction of degeneration. Many other cases similar to the above have been reported by different writers since this time, of bulbar paralysis, without any anatomical lesions and in this way a distinct clinical entity has been slowly developed, which is known as myasthenia gravis.

In 1891 Goldflam added greatly to the definiteness of this group of symptoms by showing that the most characteristic clinical feature was an abnormally rapid tiring of the muscles, rather than an absolute paralysis of them; and in 1895 Jolly still further defined the clinical picture by showing that a peculiar electrical reaction of the muscles and nerves, "myasthenic reaction," was present in this disease.

Finally, in 1901, Weigert went far toward establishing a pathological basis for this disease by describing in a typical case of myasthenia gravis a sarcoma of the thymus gland and an infiltration of the muscles by foci of lymphoid cells, which finding has since been confirmed in other cases.

From medical literature there has been tabulated a series of one hundred and fourteen cases, of which forty-two were males and seventy-two females, showing that the disease is nearly twice as frequent among females as males. The disease first manifested itself most often between the ages of twenty and thirty years. Under ten years of age there were but three cases, between ten and twenty years seventeen cases, between twenty and thirty years forty-six cases, between thirty and forty years twenty-five cases, between forty and fifty years thirteen cases, between fifty and sixty years five cass, btween sixty and seventy years three cases, and in two cases the ages were not noted.

The chief clinical symptoms of this disease may briefly be considered as follows:

Ptosis, of slow development.

Muscular weakness of some one muscle or group of muscles.

Inability to raise the foot upon the step.

Difficulty in mastication.

Difficulty in deglutition.

Regurgitation of food through nose on attempting to swallow food, especially liquids.

Myasthenic reaction of muscles.

The absence of muscular atrophy.

The absence of electrical reaction of degeneration.

Rapid tiring of muscles when used.

The development of these symptoms as to time are found to vary considerably, but in none of the cases reported were these symptoms developed simultaneously, even in the most rapid cases which terminated fatally in twenty-nine days. Two days elapsed between the development of the first and second symptoms and fourteen days passed before the development of the disease was complete and the history shows that days, weeks, months and even years may elapse before other symptoms present themselves.

In rare cases, the disease commences with pain in the neck muscles, or in some other part of the body. In the great majority of cases, it commences by a general weakness, or by a weakness of some one muscle or group of muscles.

Ptosis was the first symptom to appear in thirty-seven of the tabulated cases and the second in twelve, which shows this to be a very early symptom in nearly one-half of the cases.

In the tabulated cases, the first symptom (weakness) occurred in the distribution of the nerves arising from the gray matter in the floor of the aquaeductus silvii in fifty cases, ptosis in thirty-seven cases, diplopia in thirteen cases, thus showing ocular paralysis in forty-five per cent. of all cases. In the distribution of the nerves arising from the floor of the fourth ventricle in twenty-five cases, difficulty in speech in sixteen cases, difficulty in deglutition in four cases. Facial paralysis in three, weakness of muscles in two cases. Thus we find facial, hypoglossal and spinal accessory paralysis in twenty-three per cent. of all cases and in the distribution of the nerves arising from the gray matter in the anterior horns of the spinal cord in thirty-seven cases, showing weakness of arms or legs or both in thirty-two per cent. of all cases. The first symptom was not noted in two cases.

This is the typical picture of this disease. It is surprising how accurately it is duplicated by the great majority of reported cases. Greater uniformity is met with in few diseases. In the majority of cases, the weakness commences in the ocular muscles, involves next the facial muscles and muscles of speech, next those of deglutition and finally extends downwards to the muscles of the arms and legs. But in a minority of cases this is not true, the reverse may take place or the extension of the paralysis may be altogether irregular.

Usually the muscles which are most constantly in action show the greatest weakness but this is not always the case.

Certain groups of muscles and those not always in constant use may alone be affected, the others being entirely normal. Muscles which do show tiring on use, may show the electrical myasthenic reaction and viceversa, and in any given case, even though it be severe and advanced, some of the muscles may not show either of these phenomena. In almost every case of myasthenia gravis, without exception, there is sooner or later ophthalmoplegia externa, diplegia facialis, dysarthria, dysphagia and weakness of neck, trunk, arms and legs, more or less pronounced.

Bulbar paralysis, to a greater or lesser degree, was present in all the tabulated cases. Weakness of the extremities was present in all the cases, except one which was of doubtful diagnosis on account of the youthful age of the patient and other reasons. ocular paralysis affects the external muscles of the eye, only; the internal muscles of the eye never being affected. Ptosis was present in over eighty-five per cent. of all cases. Dyspnoea was not such a constant symptom but was noted as being present in about forty per cent. of the reported cases. The weakness of so many muscles gives to the patient a characteristic expression.

The double ptosis causes a sleepy appearance, which is associated rarely with strabismus or nystagmus, and more frequently with an inability to close the eyelids completely and firmly. The diplegia facialis renders the fact expressionless and gives a peculiar apathetic, even sinister character to the

laugh, in that the facial muscles play no part in it. The mouth is usually open, and the head hangs forward; while in other and less severe cases, on account of the ptosis and weakness of the occipito-frontalis muscle, the head is held extended backwards, to enable the patient to see. The weakness of the muscles of the arms and legs shows itself in rapid exhaustion upon active movement, and this exhaustion is accompanied by rapid pulse and respiration, often also by tremor and sweating. In speaking, the voice, at first normal, soon becomes indistinct and complete aphonia has resulted when the patient has counted up to the number forty or fifty. Weakness or myasthenia has been detected in the laryngeal muscles by the laryngoscope, in a few cases.

Eating is a difficult and slow process, weakness and rapid exhaustion being present in some or all of the muscles concerned. Those of the lips, the tongue, the masseters and temporals, and most frequently of all in the throat and pharyngeal muscles.

Finally a very striking symptom of the disease is dyspnoea. It occurs after exertion and in spontaneous paroxysms of great severity. The patients usually die in an attack of dyspnoea, either spontaneous or caused by choking while eating. All these characteristic features of the disease are more marked, towards the end of the day and after exertion, and may be entirely absent in the early morning after the night's sleep.

Of course, muscle-tiring occurs both physiologically and pathologically, but in no other condition does it attain the extreme degree which is common in myasthenia gravis. The combination of weakness and rapid exhaustion in the disease causes every continued act, such as eating, to be executed very slowly. The tiring is limited to the group of muscles contracted in the great majority of cases, but in some cases, activity in one group of muscles will cause tiring not only of them, but also of adjacent or even remote muscles.

This phenomena of muscle-tiring is, in the great majority of cases, confined to voluntary acts; the purely reflex acts of the eye and extremities do not show any abnormal tiring. It is mainly the rapid muscle-tiring which makes this disease so vari-

able in its manifestations. The weakness varies from day to day and from hour to hour, according as the muscles are more or less tired.

The course of the disease was chronic in one hundred and eight of the tabulated cases and was acute and sub-acute in five. The disease presented decided variability in the intensity of the symptoms from day to day in ninety-eight of the tabulated cases, and increased steadily without marked variations in sixteen. In forty-two of the tabulated cases there were intervals of weeks, months, or years in which symptoms were greatly improved or altogether absent, and later the case relapsed into its former or a worse condition. Even where the disease shows no distinct intermissions and relapses, it is usual for it to extend to other parts and to progress in the parts already involved, intermittently and irregularly by exacerbations. In other cases the process and extensions are gradual and continuous.

The variability is so constant and the relapses so frequent, that they constitute characteristic features of this disease.

In regard to the termination of the disease, fifty of the tabulated cases died, seven recovered and fifty-seven were living, some improved, some unimproved at the time the cases were reported.

Pathology.—We are fairly well acquainted with the clinical features of myasthenia gravis, but as to its essential nature we are profoundly ignorant. The disease probably depends upon some one definite cause, but to this cause we have no clew. On the other hand, no definite and characteristic lesion has been found in all, or even in many cases, after death. For any comprehension of the disease, we must therefore depend upon our study of the cases clinically.

From such a study it is evident that the disease is purely a motor one, and that the lesion or change must be situated either in the muscles or in the peripheral or central motor neurons. The disease, even when of long duration, is not associated with mental disturbances, convulsions or any other symptoms which would justify us in considering it a disease of the cerebral hemispheres. It must, therefore, de-

pend upon disturbances in the muscles, the peripheral nerves or motor muscles.

The myasthenic electrical reaction so commonly present makes it practically certain that the disturbances are in the muscles or the nerve terminations (or end plates) and not in the motor nuclei; for although there is some evidence that the myasthenic reaction occurs in cerebral neurasthenia muscular dystrophies, and in a few other conditions, there is no evidence that this reaction occurs in nuclear lesions nor in neuritis.

It would seem as if the only reason why a muscle tires, is that the waste products of its activity are not promptly enough carried away, or that oxygen and nutriment cannot be supplied in sufficient quantity; so that the tiring of a muscle is probably due to a deficiency of the circulation through it of lymph or blood or both. When blood is insufficiently supplied to the muscles, as when the arteries are very atheromatous, no such rapid muscle tiring is present as is met with in myasthenia gravis; so that it seems as though the fault must be in the lymph circulation. The greatest demand on the lymph circulation is made when the muscle is excited to tetanic contraction by the faradic current, and under such circumstances the muscles tire most rapidly.

It is possible then to explain both the muscular weakness and the rapid muscle tiring under stimulation, both of the will and of faradism, by interference with the lymph circulation; and the only lesion which has as yet been found, which has been confirmed by a number of observers, is the infiltration of the muscles with lymphoid cells, which would certainly either indicate or cause some interference with the lymph circulation.

It may be questioned whether the lymphoid infiltration is primary or secondary, but most of the authorities are inclined to the former.

Unsatisfactory and obscure as the pathology of myasthenia gravis is, one is rather driven to the belief that the solution of the mystery lies in this infiltration of the muscles with lymphoid cells. Concerning the direct or indirect causation of this infiltration we are in ignorance, but there is evidence that this

is of a very chronic nature and exists in the muscles during a long time, as this lymphoid infiltration has been found not only in the muscles after death but also in a piece of the muscle excised from a patient one year before death.

Prognosis.—The prognosis as to recovery is very bad and may really be hopeless, and yet we have reason to hope and to believe that a few cases may terminate in permanent recovery. The majority of the cases terminate fatally in from one to three years, while other cases may continue fifteen or twenty years, presenting in their courses long periods of intermission. It is impossible to say, in any individual case, whether its course will be long or short, except that the more pronounced are the bulbar symptoms, the sooner, in general, will be the fatal termination.

Treatment.—The therapeutics of myasthenia gravis is an affair of the future. At the present time no way is known to prevent the development of the disease, or to cure it when it has developed. A great variety of the therapeutic measures, both external and internal, have been employd without success. Most observers are agreed that the patients should have complete rest and that their muscles should be moderately stimulated by mild galvanic currents and by gentle massage. The nutrition of the patient is always a difficult problem. The heartiest meal should be taken early in the day when the patient is less tired. Usually the food should be liquid or semsolid, but if there is much regurgitation through the nose, solid food may be swallowed easiest. There is no drug which seems to influence the disease favorably.

In connection with this paper I desire to report the following case, which came under my observation January 7, 1906, Mrs. C., with the following history:

Family history: Maternal grandfather died at the age of seventy-five or eighty, of general debility.

Maternal grandmother died earlier in life. The cause of death was unknown to the patient. Paternal grandfather died at the age of eighty-one years, of general debility.

Paternal grandmother died at the age of fifty-four years of heart trouble.

Father and mother both living and enjoying good health. Has five brothers and two sisters, all living and well.

Previous history.—Has had the usual diseases of childhood, could elicit no history of specific disease. Menstruated at fourteen years of age, which was regular in type. Married at the age of twenty-two years; has had four children, three living, one of which was born since the development of this condition. All her labors were normal and she had a good getting up in each case.

Present illness.—The present illness began nearly three years ago, when she began to notice a drooping of the eyelids, which continued for about two months, when they began to improve; but later on, in the spring of 1905, she suffered a relapse, at which time she was under severe strain, owing to sickness in the family. At this time she noticed a weakness of the legs and arms, especial weakness of the legs when attempting to go up stairs. This condition was more marked after exercise or on attempting to do any work. This set of symptoms continued gradually getting worse, until she was compelled to take to her bed on two or three occasions for periods ranging from one to two weeks. During her first period in bed, she noticed trouble in masticating food and also in deglutition. During the time when she was out of bed she was unable to walk except on the floor where it was perfectly level. I saw her for the first time on January 7, 1906, when all of the foregoing symptoms were present.

Physical examination.—Inspection shows a young woman, twenty-eight years of age, well formed and well nourished, fair complexion, dark hair, grey eyes, no emaciation or other deformity, apex beat not visible. Ptosis and flaccid cheeks.

Palpation confirms the information obtained by inspection and elicits the following additional points. The flesh and musculature are found to be firm in all parts of the body. Vocal fremitus normal, no tenderness or pain points detected. Apex beat in normal position, rapid pulse, 120.

Percussion.—Normal resonance over entire chest. Heart could not be outlined but was considered normal in size. Liver dullness normal.

Ascultation.—Breath sounds normal, heart sounds clear and distinct, no murmurs present.

The case was held under observation and treatment for a period of twelve days, at the end of which time there were no indications of improvement, and as her eyes were causing her considerable annoyance, I referred her to Dr. Buckman, for a correction of her eye condition, who very kindly made the necessary examination, fitted her with glasses and happily suggested that it was probably a case of myasthenia gravis. After this, the treatment was continued with some modifications and the patient closely observed for some time.

There were some indications of improvement, but not marked. During this period of observation, I was unable to make a satisfactory diagnosis and began to look up the subject of myasthenia gravis, and after making the tests required for developing the case, found that the symptoms complex corresponded very favorably with those found in this disease, as enumerated above, and I also came to the conclusion that it was a probable case of myasthenia gravis. Treatment consisted of massage, electricity and the internal administration of hemotinics and small doses of strychnine, during which time improvement was noticed, but rather slow; she was able to be around the house and has not been confined to her bed on account of this trouble since. During the month of April, 1906, she became pregnant; this, however, did not interfere with her general improvement, except for some disturbance of her stomach, which reacted well to treatment. At this time the massage and electricity was discontinued. Her period of gestation was normal and on January 12, 1907, I delivered her of a ten-pound girl, after a perfectly normal labor. Her recovery was uneventful, except that the muscular weakness of the legs retarded, somewhat, her walking for a time. She has nursed the baby, which is strong and healthy. The patient is feeling good, excepting that she tires easily on attempting to use the hands, arms and legs, but is able to walk several blocks, has no trouble in masticating food or swallowing, and the ptosis is much improved.

PROGRESSIVE PERNICIOUS ANAEMIA.

BY DR. CHARLES H. MINER, WILKES-BARRE, PA.

READ NOVEMBER 27, 1907.

I have taken the liberty of preparing a short outline of the symptoms and pathology of this disease before giving the histories of the cases I have to report.

The disease was first clearly described by Addison, who said it was "a general anaemia occurring without any discoverable cause whatever, cases in which there had been no previous loss of blood, no exhausting diarrhoea, no chlorosis, no purpura, no renal, splenic, miasmatic, glandular, strumous or malignant disease."

There are conditions, however, which may be associated with a profound anaemia not to be distinguished clinically from Addison's idiopathic form, as in:

1. Pregnancy and parturition.
2. Atrophy of the stomach.
3. Parasites as anchylostoma and the bothriocephalus.

Later investigations lead us to believe that the anaemia is the result of a toxemia. What the exact nature of the toxin is, is still a matter of speculation and doubt. It is generally agreed, however, that its origin is somewhere in the alimentary canal. Dr. C. A. Herter has recently shown that the bacillus aerogenes capsulatus is an active hemolytic agent and that when the bacillus coli type is sufficiently meagre to permit a very large and free growth of the bacillus aerogenes, alterations in the blood gradually appear and ultimately the blood picture of pernicious anaemia arises.

As Osler says, "The description given by Addison presents the chief features of the disease in a masterly way."

"It makes its approach in so slow and insidious a manner, that the patient can hardly fix a date to the earliest feeling of that languor which is shortly to become extreme. The countenance gets pale, the whites of the eyes become pearly, the general frame flabby rather than wasted, the pulse perhaps

large, but remarkably soft and compressible, and occasionally with a slight jerk, especially under the slightest excitement. There is an increasing indisposition to exertion, with an uncomfortable feeling of faintness, of breathlessness in attempting it; the heart is readily made to palpitate; the whole surface of the body presents a blanched, smooth, and waxy appearance; the lips, gums, and the tongue seem bloodless, the flabbiness of the solids increases, the appetite fails, extreme languor and faintness supervene, breathlessness and palpitations are produced by the most trifling exertion or emotion; some slight oedema is probably perceived about the ankles; the debility becomes extreme—the patient can no longer rise from bed; the mind occasionally wanders; he falls into a prostrate and half torpid state, and at length expires; nevertheless, to the very last, and after sickness of several months' duration, the bulkiness of the general frame and the amount of obesity often present a most striking contrast to the failure and exhaustion observable in every respect."

Frequently the first symptom noticed is pallor. This may grow progressively and without interruption or may vary in intensity from time to time. Quite commonly in the beginning there is jaundice which may be a transient condition, but in advanced cases a subicteric hue of the skin is persistent. The usual appearance is quite characteristic, however. The face is round and fleshy, the limbs and body of normal size and often conspicuously rounded. The folds about the neck, abdomen and flexures of the points may be ample, but when the hand is placed upon any part there is a most striking sense of flabbiness and instability.

The subcutaneous tissues are well preserved and may even increase in bulk so that the patient actually grows stouter as the disease advances. This increase in size is due partly to serous infiltration or dropsy, which is rarely absent about the ankles or beneath the eyes and in fatal cases may reach the extremest grades of anasarca.

Coincident with the increasing pallor, the strength of the

patient suffers progressive decrease until at last he is unable to walk or stand.

In many cases cardiovascular disturbances occur early in the disease and grow in intensity to the end. The circulatory symptoms may thus dominate the clinical picture of the disease. In most cases, however, these symptoms are only of moderate severity, resembling the manifestations on the part of the circulatory system seen in other anaemias but somewhat more intense.

Palpitation of the heart is particularly marked, and the patient may faint on the least excitement. Haemic murmurs are usually present. The larger arteries pulsate visibly and the pulse is full and often suggests the water hammer beat of aortic insufficiency.

Dyspnoea is the most frequent symptom on the part of the respiratory apparatus.

Gastro intestinal symptoms, such as dyspepsia, nausea and vomiting may be present throughout the disease. Diarrhaea is not infrequent.

Subcutaneous and submucous hemorrhages are frequently present. Quite severe bleeding from the stomach and bowels may occur. The urine usually abundant, with a low specific gravity, no albumen, but may show urobilin.

Subjective nervous symptoms are not infrequently met with in the earlier part or throughout the disease. More serious nervous symptoms may occur. The commonest are sensory disturbances with a spastic condition.

Retinal hemorrhages may occur without symptoms or may give rise to considerable disturbance of vision.

THE BLOOD.

The greatest interest in the pathology of this disease attaches to the condition of the blood itself.

As the blood flows from the incision in the finger or ear, the color is light pink, and has been likened to the water used in washing meat (meat washings). It most cases the blood flows freely from a small incision, but occasionally it may be difficult to obtain a single drop.

Marked reduction in the number of red corpuscles or erythrocytes is the most significant and characteristic feature of the disease. The average count of Osler's forty cases was 1,500,000 per cubic millimeter and the haemoglobin was about 30 per cent. The greatest reduction recorded in a case which recovered was that found by Quincke, the count being 143,000. The proportion of the haemoglobin is always greatly reduced, but is usually much less diminished than that of the corpuscles, so that the individual globular richness is plus, a condition exactly opposite to that which occurs in chlorosis and the secondary anaemias in which the corpuscular richness in coloring matter is minus. This excess of haemoglobin is probably due to the existence of many large red corpuscles or megalocytes.

The study of the individual red corpuscles is most important and we distinguish large giant forms, small dwarf corpuscles, irregular forms and nucleated corpuscles.

The megalocytes or giant forms are considered pathognomonic of the disease and are somewhat oblong in shape and pale in color.

Small dwarf corpuscles or microcytes have a deeper red color and are less distinctive of pernicious anaemia.

The corpuscles usually show a marked irregularity in form; one end of a corpuscle may retain its shape while the other is narrow and extended. These irregular forms are called poikilocytes.

Nucleated red corpuscles or erythro-blasts are a constant feature of the disease. It may require a long search to find them in a cover slip preparation. The size of the nucleated red corpuscles varies as does that of the normal forms and we may distinguish normo-blasts, micro-blasts and megalo-blasts, according as the size is normal, small or large.

The leucocytes or white cells are usually normal or diminished in number.

CASE 1. W. T., blacksmith, age 47. I saw the patient through the kindness of Dr. Smith, first on June 7, 1906. He gave a history of having had an attack of malaria two years previous, with chills and fever, which lasted about two months.

Previous to this attack his health had been good and he had worked hard at his trade, as a blacksmith, nearly every day for years. Dr. Smith had had him under observation since the first of the year, when he was pale and complained principally of weakness and palpitation of the heart. His appetite was good and bowels regular, but complained of a severe boring pain in the epigastrium. He stated that he had fainted three times without apparent reason.

On examination he looked well nourished, but pale, with a slight yellowish tinge. He weighed 133½ lbs. The lungs were found to be normal. The heart was small with a systolic murmur at the base and apex. The pulse was full and compressible with a blood pressure by the Rivi Rocci apparatus of 113. A decided pulsation could be seen in the arteries of the neck and other parts of the body. The bowel movements were so black that we suspected intestinal bleeding, but on making the laboratory tests for occult blood there was no positive reaction. There was a slight oedema of the ankles. The liver and spleen were not enlarged.

The blood showed a great reduction of the red blood corpuscles to 2,125,000 and the haemoglobin to 30 per cent. There were many small and large red cells with one or two nucleated red cells to a cover slip. There was no increase in the leucocytes.

The patient improved very much on arsenic and ovoferrin, and went back to work without permission on September first. He worked for six weeks but had to give up again, when he began to lose strength rapidly.

I saw him again on April 12, 1907, when he was very ill, with face, abdomen and legs much swollen. The blood appeared at the incision in the ear almost like water, and the haemoglobin was reduced to six per cent. No blood count was taken but cover slips were made and stained. These showed marked poikilocytosis with an increase in the number of nucleated reds and with no increase in leucocytes. In this case as has often proved to be the case, the increase in megalo-blasts or nucleated red cells was an unfavorable sign. He improved

somewhat and then failed again, until his death in October, 1907. During these latter months his face, arms, legs and trunk would swell up in the most remarkable manner to double their normal size only to disappear again for a time. There were also one or two severe hemorrhages from the bowels.

CASE 2.—Mr. B., whom I saw through the kindness of Dr. Stewart on June 11, 1903. He gave a history of good health till three years previous when he had a bilious attack with jaundice. He complained of general weakness for one year, but no symptoms of poor digestion. On examination he seemed fat, but markedly pale, with a light yellowish tinge. There was a haemic murmur at the base of the heart and the ankles were swollen. The spleen and liver were not enlarged.

The blood examination showed a reduction of red blood corpuscles to 1,008,320, and the haemoglobin to 30 per cent. There was a poikilocytosis with a few nucleated red corpuscles. There was no increase in leucocytes, but the mononuclear elements were in the majority.

I saw him again on October 2, 1903, three months and a half later, when he was remarkably improved in every way. In fact he did not look like the same man. He had taken arsenic in the form of Fowler's solution in large doses up to twenty drops three times a day. The blood examination was surprising as the number of red cells had increased to 3,130,000 and the haemoglobin to 80 per cent. The red cells were normal in shape and size and no nucleated forms could be found. He worked for a time, but died about a year later. He had some swelling of the trunk and legs but not nearly so marked as in case one. Both cases showed a decided but temporary improvement under treatment. The charts represent a diagram of normal blood and of the blood in pernicious anaemia; under the microscope is a slide made from the blood of case two.

HYDROPHOBIA, RABIES OR LYSSA.

BY DR. D. G. ROBINHOLD, FORTY FORT, PA.

READ DECEMBER 11, 1907.

Hydrophobia is a specific, spasmodic and paralytic disease, due to infection peculiar to carnivora and to a less extent herbivora. The animal may be a dog, a cat, a horse, a cow, a wolf or a fox, the most common animal, however, being the dog. Only a certain number of persons, however, bitten by animals suffering from rabies contract the disease. According to Ronk about fourteen per cent. If the bite is on an exposed part, it is far more apt to cause rabies that if the teeth pass through the clothing, about the face being the most dangerous location. The saliva is the usual vehicle of contagion, but other fluids and tissues contain the virus, especially the brain and cord.

Hydrophobia has been known for centuries. At the present day, some ardent anti-vivisectionists dispute its existence. The fact that it can occur in an infant after it has been bitten by a rabid animal proves that the disease is not due to the imagination, which can be clearly proven by two cases in my experience, which I will report later. Hydrophobia is almost invariably fatal.

The period of incubation is influenced very much by the severity, character and location of the wound, varying from a few weeks to several months, and it has been alleged that it may even be two years. The initial symptoms are general nervousness, with irritability, wakefulness and depression of spirits. There is often headache and vague uneasiness, sometimes slight fever and usually a very rapid pulse, the pupils are dilated and the wound may become painful and the surrounding tissues show perversion of sensation, with some anesthesia. The patient now passes into the stage of excitement, some slight stiffness about the muscles of the throat is now noted, the voice changes and becomes husky and swallowing becomes difficult.

Soon great restlessness and excitement supervene, together with general hyperesthesia and abnormal reaction to external impressions of all kinds, to the extent, so soon as the height of the attack is reached, of causing reflex spasms. These spasms are quite distressing and severe and involve particularly the muscles of the larynx, pharynx and mouth and are accompanied by a sense of intense dyspnoea. Attempts at swallowing or taking water, as well as lights and noises precipitate the violent and painful attacks, which fact causes the patient to dread even the sight of water; whence, the common name of the disease—hydrophobia. The entire body may be thrown into clonic spasms, but there is no tonic spasm. The mind is clear usually, although during the periods of excitement there may be maniacal furor with hallucinations which pass away in the stage of relaxation. The temperature is moderately elevated, 101° F to 103° F or even higher. There is often a copious secretion of saliva, which, owing to the difficulty in swallowing, is allowed to run out of the mouth.

The patient in this stage wears an expression of the most intense anxiety. A very good diagnostic sign during this stage is to blow one's breath gently in the patient's face; it will cause great psychic disturbance or a violent reflex spasmodic contraction of the larynx. This stage lasts from one to three days, when the patient drifts into the paralytic stage, in which stage he passes into actual unconsciousness or coma, without spasms. This lasts from a few hours to twelve or eighteen hours, ending in death.

Mention might be made here of the so-called pseudo-rabies, or lyssaphobia; the morbid fear of hydrophobia, leading by the influence of auto-suggestions, to a group of nervous and hysterical manifestations closely simulating the true disease. A neurotic person of inherited nervous instability and easily influenced by suggestions is bitten by a dog supposed to be mad; after a variable time and often in direct consequence of having been joked about the danger, or from brooding over the possibility of an attack of the disease, some nervous symptoms paralleling those of rabies appear. The subject becomes

apprehensive, despondent, restless, then excited and exhibits some spasm or a choking sensation in the throat, this being often only a perversion of the frequently seen globus hystericus. Occasionally convulsive attacks of an hysteroid character occur. The patient exaggerates the danger and protests that he is actually going mad. Other varied hysterical phenomena may be present. The attack does not progress, however, there is no disturbance of the general health, nor of any of the bodily functions, no temperature change, no weakness, no prostration. The attack lasts for days or weeks and then subsides. Probably no case has proven fatal, the alleged fatal cases being instances of the true rabies, as, on the other hand, many of the cases of reported recovery from rabies are most likely instances of the pseudal affection.

It is claimed by some authorities that a bite of a rabid dog will produce hydrophobia in man, but the hydrophobic man does not reproduce it in others. Rabies may be communicated from dog to dog but not hydrophobia from man to man.

The treatment consists of the following: When a person is bitten by a supposedly rabid animal and is seen soon after the injury, constriction should be applied if possible above the wound, the wounded area should be excised, cauterized with a hot iron or the actual cautery, or with fuming hydrochloric acid or silver nitrate, and dressed antiseptically. If the patient is not seen for a number of hours or a day or two after the injury, cauterization is useless; and it is not only useless, but it may delude the patient and his friends with a feeling of security. The history of the animal should be obtained as far as possible. The animal should not be killed, but captured and placed in a kennel under lock and key for at least one week. If at the end of that time he shows no signs of being sick, there is naturally no danger for the person bitten. If the animal dies, an autopsy should be made, all the organs examined, and a portion of the brain and spinal cord emulsified and innoculated in guinea-pigs and rabbits. If this can not be done at home, these parts should be sent to a laboratory for examination. If it be proven from examination of these parts

that the animal which inflicted the injury was hydrophobic, the patient should at once be sent to a Pasteur Institute for the Pasteur innoculation treatment. The work of Pasteur in developing the treatment of rabies by preventative innoculation, constitutes by far the most important addition to our knowledge of the nature of the affection and the possibilities of its cure which has been made since the disease was first recognized.

Pasteur found that the toxines in the spinal cords of rabbits which has been killed by rabid innoculation gradually lost their virulence if the cord were kept for some days under antiseptic precautions, so that after about two weeks the cord was no longer poisonous, innoculations from it failing to produce the disease. This fact offered then a method of gradually establishing an immunity, by innoculating the infected animal with cords which had, to a certain degree, lost their virulence through preservation in this way. The production of artificial immunity is the now widely and successfully employed Pasteur treatment for rabies, persons being bitten by mad dogs being carried through a series of innoculations with the spinal cords of rabbits, the detail of which I shall not enter into here. At the conclusion of this treatment the patient is regarded as immune, and the subsequent development of rabies is but slightly to be dreaded.

At the time of the onset of the first symptoms of hydrophobia, the patient should be kept in a quiet, darkened room. He should not be forced to swallow food or drink. Nutrient enemeta should be employed and large quantities of water be given by the rectum. Local applications of cocaine to the fauces and pharynx are said to prevent spasms and enable the patient to swallow. During the violent spasms, chloroform may be used by inhalation, and the administration of bromides and chloral by the mouth and morphine hypodermically, curare in one-tenth to one-fourth grain doses every half hour until muscular relaxation occurs, is lauded by some, but all these remedies, however, are merely palliative and exert no influence whatever over the course of the disease.

The two cases of hydrophobia which I have to report, are:

S. B., male, age six and one-half years, bitten on the nose by a dog on April 30, 1907. At that time the wound was cleansed antiseptically and cauterized with silver nitrate. The dog was thought to be suffering from rabies, as it was a dog owned by the family, and had been on the father's delivery wagon all that day. But after biting the boy he very suddenly disappeared. Nothing was thought of the bite inflicted on this boy until suddenly on October 18 following he was taken violently ill in the middle of the night with vomiting. The next day the vomiting had ceased, but he had a constant sensation of choking. The morning of the 19th I was called to see the boy. I found him to be very nervous and he appeared to be afraid of me. As I would approach him he would try to get away from me; he claimed that he could not swallow, had no pain in his throat unless he tried to swallow. I had him make an attempt to take a swallow of water, but found that he could not. After struggling with him for a while. I succeeded in examining his throat, which I found to be normal in appearance. I ordered the child to be kept in a quiet room, free from excitement and noise, and a mixture of the bromides to be administered. Again saw him about nine P. M. He then had a slight fever, 101° F., pulse 130, pupils dilated and a very anxious expression. It was impossible for me even to touch any part of his body without causing a spasmodic condition of the larynx and pharynx. I was called again at five o'clock the next morning. I then called Dr. Long, in consultation. Before Dr. Long arrived he had partly quieted down, but was having convulsions. We administered chloroform by inhalation. He died at seven A. M.

Case No. 2. V. J., female, age two and one-half years. I was called to see this child at 8 A. M., October 31st, this year. Her face showed a wild and anxious look, pupils dilated. I could not lay my hand on any part of her body without causing spasms of the larynx and pharynx. It was impossible to get her to try to swallow. I then learned that five weeks previous she was bitten on the nose by a dog, but the wound received no attention. I saw the child again at noon

the same day with Dr. Long; she had then passed into the stage of excitement. We administered morphine one-sixteenth of a grain hypodermically with very little effect. After returning to my office I telephoned to the Pasteur Institute in New York city, stating the case, but they assured me there was nothing to be done but to make the child comfortable until death should end her suffering. She died at eleven o'clock that night.

On the 24th of last month, a child was brought to my office suffering from the bite of a dog. The injury was inflicted on both legs above the ankle. The dog was thought to be suffering from rabies and was killed by the health officer of our borough. I had the dog taken up and the head cut-off, which I sent to the University of Pennsylvania for examination. The examination revealed that the dog was suffering from rabies. The next morning, the sacond boy appeared at my office, suffering from a wound on one of his fingers, inflicted by this same dog. These two boys are at the present time receiving the Pasteur innoculation treatment by Dr. Prevost in Pittston.

DISCUSSION.

Dr. Long.—It was my good fortune to be able to study in the capacity of consultant, both cases reported by Dr. Robinhold. There is little to add in symptomatology to the exhaustive way in which Dr. Robinhold has presented the cases.

In Case 1, the boy of six and one-half years, I was simply able to study the convulsive stage of the disease. Soon after my coming, the boy died in active convulsion, but I had time to observe that each paroxysm began in the right leg. The boy had been bitten in the nose.

In Case 2, the child, of two and one-half years, was in the first stage, known as the stage of excitement. His entire bearing was as one terrified, the facial expression of fright or dread, the pupils were dilated; and he gave forth anxious cries, fighting furiously with the feet and hands at the approach of strangers. Water, milk, bread and other food was refused with the same tendency to fight.

One-sixteenth grain of morphia hypodermically, soothed the patient slightly and permitted the administering of milk, but which, on attempt to swallow, caused intense spasm of the muscles of the pharynx. This patient had been bitten some five weeks previous to this seizure, under the right eye.

In neither case was the scar at all reddened or in any way marked, though Dr. Robinhold reports that the scars became bluish after death.

In Case 1, the older boy, I noted a peculiar expiratory noise, which may in other cases have given rise to the theory of the bark in hydrophobia.

Rabies canina is an infectious disease, occurs in dogs, more rarely in other animals, wolf, fox, cat and skunk. If Kipling's Nature Notes can be accepted as scientific, he adds the jackal to this list, attributing to him a season of madness, and through the wolf, warning Mowgli to shun the jackal for that period.

Madness in dogs take two forms, the raving madness and the passive madness.

The raving form begins with prodromata—the melancholy stage lasting from one to three days; the animal is low spirited, timorous and without appetite. This is followed by a stage of irritation or mania, in which the animal seems possessed with impulse to bite, runs as if pursued and raves then as if lost, uttering peculiar howls. He will not touch natural food, but swallows earth, straw, bits of wood, hair and other unusual things to satisfy some frightful abnormal craving.

In the third stage paralysis appears. The dog looks lean and wretched; this is the last stretch. He will not live long, in fact, he never lives more than ten days from the onset of the disease.

The second form, or passive madness, seems to omit the convulsive stages and goes at once from the prodomata to the paralytic.

Rabies is transferred to man by the bite of some rabid animal; ninety per cent. of cases due to bites by dogs. In the human being, the disease is known as hydrophobia, with due similarity in symptoms and stages, but at no time does rabies excite in dogs the same terror at the sight of water that hydrophobia effects in human beings.

It is of practical importance and has been repeatedly confirmed that the bite of a mad animal, even in the incubation period of rabies, can transmit the disease to man. The fact that the dog did not appear mad may have given rise to the popular notion that any dog bite may cause hydrophobia, if the dog at any later time in his life should have developed rabies.

The poison is most likely contained in the saliva and the blood, and has by these mediums been successfully innoculated in other animals. About fifty per cent. of people bitten by mad dogs would become infected without proper treatment.

The other fifty per cent. is not necessarily immune, but there has probably been imperfect infection.

When a nerve has been injured by the bite, infection is almost sure to follow and is also more apt to occur the larger the wound and the nearer it is to the brain; therefore, wounds of the face and head are most dangerous.

The period of incubation varies greatly, according to authorities, from two weeks to over ten years. These cases reported are cases of hydrophobia and not hysterical. This is proved by the ages of the patients, one two and one-half years old, the other six years, and in the older child the fact of having been bitten by a dog had been entirely forgotten by the patient and the family until questioned by the attending physician.

The symptomatology further than this, the essayist has described in adequate and satisfactory detail.

The pathology is, in brief, a decided change in the medulla, spinal cord and other nerve centers; a catarrhal condition of the respiratory organs and parenchymatous changes in the kidneys, showing an acute infection of the nerve. No micro organism has as yet been discovered.

The only treatment is preventive—the Pasteur treatment—the treatment of the attack being only palliative.

Since called to these cases of hydrophobia, I have been much stirred on the subject. I have formulated some statistics on the number of dogs registered to responsible owners. The war on dogs is a just one. There is an epidemic of rabies in this valley, and every dog in the valley should be muzzled or tied at home. It is right that we should have the protection of this quarantine and that we should continue this fight, for all dogs in the State are not worth one human life.

Appended are the city and State laws and some statistics concerning the county registration.

LAW AS TO DOGS IN WILKES-BARRE CITY.

All owners and keepers of dogs and bitches within the city limits shall annually be obliged to take out and pay for a license for the privilege of permitting such dogs and bitches to run at large upon the public highways of the city, the public commons, and public property within the limits of the same, as follows. For each dog or bitch the sum of two and one-half dollars.—*City Digest, page 13, section 8.* Ordinance passed May 8, 1889.

All dogs and bitches caught at large, that are not registered, are subject to seizure by the dog catcher, placed in a pound and, if not redeemed within forty-eight hours, may be killed by the

dog catcher and buried. The fees for redeeming each dog is $2.00 for the seizure and twenty-five cents per day for each day he is impounded.—*City Digest, page 13, sections 11, 12 and 13.*

The mayor may issue a proclamation, if in the opinion of the mayor or council there are good reasons for believing that the dogs are liable to become mad, compelling all dogs to be muzzled. In case of violation of this proclamation all dogs found at large without a muzzle may be shot, and the owner fined ten dollars.—*City Digest, page 12, section 7.*

Number of licenses issued in Wilkes-Barre city, 1906, was 114.

Number of licenses issued in Wilkes-Barre city, 1907, was 204.

The State live stock sanitary board has power under the Act of 27th March, 1903, to order the quarantine, restraint, confinement and muzzling of dogs, when rabies or hydrophobia shall occur in any locality of the State, in the locality in which danger of the infection is deemed to exist. After order of quarantine, etc., if the order is not complied with, the violators shall be deemed guilty of a misdemeanor and subject to a fine of not less than ten nor more than one hundred dollars. All dogs running at large are to be shot, and the owner has no action against the person killing his or her dog.

DOGS FOR 1907.

Ashley Boro., 92; Avoca Boro., none; Black Creek Twp., 230; Bear Creek Twp., 19; Butler Twp., 218; Buck Twp, 22; Dallas Twp., 94; Dallas Boro., 6; Courtdale Boro., 51; Conyngham Boro., 33; Conyngham Twp., 141; Dorrance Twp., 110; Denison Twp., 58; Dorranceton Boro., 156; Duryea Boro., 177; Exeter Boro., 105; Exeter Twp., 40; Edwardsville Boro., 36; Fairmount Twp., 121; Fairview Twp., 69; Forty Fort Boro., 108; Franklin Twp., 62; Foster Twp., none; Freeland Boro., 107; Hanover, 7; Hazle Twp., 174; Hollenback Twp., 88; Hughestown Boro., 12; Huntington Twp., 168; Hunlock Twp., 72; Jackson Twp., 90; Jeddo Boro., 25; Jenkins Twp., 1; Kingston Boro., 201; Kingston Twp., 74; Laflin Boro., 42; Laurel Run Boro., none; Lake Twp., 100; Lehman Twp., 116; Luzerne Boro., 218; Miners Mills Boro., 69; Nescopeck Boro., 90; Nescopeck Twp., 80; New Columbus Boro., 25; Newport Twp., 273; Nanticoke Boro., 153; Pringle Twp., 139; Parsons Boro., none; Plymouth Twp., 279; Pittston Twp., 2; Plains Twp., 401; Plymouth Boro., 105; Ross Twp., 142;

Salem Twp., 165; Slocum Twp., 87; Sugar Loaf Twp., none; Shickshinny Boro., 172; Swoyersville Boro., 10; Sugar Notch Boro., 9; Union Twp., 95; Warrior Run Boro., 47; West Hazleton Boro., 133; Wright Twp., 57; West Pittston Boro., 186; West Wyoming Boro., 75; Wyoming Boro., 108; White Haven Boro, 58; Wilkes-Barre Twp., 227; Yatesville Boro, 11. Total, 8517.

Dr. Prevost.—I do not take this up as a discussion of Dr. Robinhold's paper on rabies, but rather to report a number of cases I have administered Pasteur Treatment under the supervision of Dr. W. D. Poor, who has charge of the Research Laboratory of the Department of Health, City of New York.

On May 4, 1907, I was called by 'phone to see L. H., age 30, my first case, who was bitten on the left hand while attempting to drive a strange dog out of his yard, after it had bitten two boys. The man caught the dog by the back of the neck, and held him, when a neighboring man came and shot the dog through the head, instantly killing him. I cauterized the wound, advised the man to go to the New York Laboratory for Pasteur Treatment, and the following day we left for New York, taking the dog's head and neck.

I first called on Dr. Darlington, Chief of the Department of Health of New York City, and found him out of the city, then went to the Research Laboratory, which was in charge of Dr. W. D. Poor. While waiting at the laboratory the pathologist examined the brain and spinal cord, and reported it to be a true case of rabies. Dr. Poor came in and examined the case and advised treatment, which he immediately began, and ordered his assistant to put up and mail, by special delivery, treatment for same and two cases left at home.

Case 1.—L. H., age 30, bitten on the left hand by a rabid dog, May 4, 1907, treatment began May 7, 1907, injecting 6 cc in 2 injections for four days, and the remaining seventeen days 5 cc; at the ninth injection there was some enlargement of the inguinal glands, the patient complained of some burning after injections. June 15th, two weeks after treatment ended, patient reported well.

Case 2.—H. H., age 5, bitten on the forehead over the eye by the same dog, May 4, 1907, wound was cauterized, and treatment began May 8th, continued for twenty-eight days. First four days received 5 cc in 2 injections, afterwards received 2½ for twenty-four days, single injection. On the tenth day there was some redness and swelling of the abdomen; a lotion of alum and acetate of lead applied and the inflammation soon

subsided; reported two weeks after treatment ended in good condition.

Case 3.—E. S., age 7, bitten on the wrist and left leg. Wound cauterized with carbolic acid, and treatment began May 8th, and continued twenty-one days; first four days he received 2 injections of 3 cc each, for the remaining seventeen days he received 5 cc single injection. No bad symptoms, and reported two weeks after treatment ended in good condition.

Case 4.—W. F. Exeter, age 7, bitten on the leg by a tramp dog, which was killed and the head shipped to the New York Board of Health; reported to be a case of rabies. Treatment began three days after he was bitten. He received 6 cc in 2 injections for four days, and 5 cc for two days, for the remaining fourteen days he received 2½ cc in single injection; on the twelfth day of treatment there was some discoloration of abdomen and spots resembling urticaria. Applied the usual lotion, all cleared up, and patient reported two weeks after treatment ended in good condition.

Case 5.—J. McG., Larksville, age 7, bitten on the left arm, middle of humerus, through the undershirt and waist, October 6, 1907. Wound not cauterized. On examination of the dog's head at the U. P laboratory, diagnosis of rabies was made. Ten days later this child was taken to New York City Research Laboratory, and Dr. Poor began treatment and sent them to me to continue same. 6 cc for four days, 2 injections, and for seventeen days 2½ cc single injection; case reported two weeks later in good condition.

Case 6.—M. S., female, Larksville, age 5, bitten October 6, 1907, on the left bare forearm, some laceration of muscles. Wound cauterized with carbolic acid. This case was also taken to New York to Dr. Poor, who referred the case to me. Received 6 cc the first four days, next seventeen days 2½ cc; on the third day the child was exceedingly nervous and fainted on their way home from the office, which I think was due more to fear than the result of the serum. Case reported fifteen days after treatment in good condition.

Case 7.—S. T., Larksville (Polish), age 7, bitten on the right arm October 7, 1907. Wound was not cauterized, but received some treatment after one week. Treatment began thirty-two days after bite. First three days received 6 cc, and remaining eighteen days received 2½ cc. From the eighth to the sixteenth treatment, a considerable number of little lumps under the skin, which seemed due more to the child's condition,

as he was poorly nourished. He reported two weeks after in good condition.

Case 5, 6 and 7 were bitten by the same dog, which also bit a cow, dog, and a horse; all three animals developed rabies, and were killed. This is the same dog spoken of under case 5. Examination of dog's head made at the U. P. laboratory.

Case 8.—S. M., Swoyersville, age 39, bitten October 19, 1907, by a dog supposed to be rabid. Two children died of rabies, which were reported by Dr. Robinhold. Patient also helped to take care of case of rabies. Treatment began twenty-five days after being bitten; four days got 6 cc in 2 injections, then 2½ cc for sixteen days. This patient complained of some headache and backache, burning after injections and there was considerable redness and swelling of abdomen. This was my first experience with a fat abdominal wall. Reported two weeks after treatment in good condition.

Case 9 and 10.—J. B. and A. B., parents of child who died of rabies, were not bitten, but in wiping foam from child's mouth, had abrasions on hands, and were advised to take the treatment by Pasteur Institute at New York. They then came to me and I began treatment twenty-eight days after exposure; for three days 6 cc in 2 injections, remaining sixteen days 2½ cc; treatment nineteen days, complained of pain, burning on injection, and considerable swelling of cellular tissue and redness, and on tenth dose small blebs appeared, which resembled shingles; was painful. Both were fat abdominal walls. Wife developed an abcess in abdominal wall three days after treatment ended; opened and drained. Both reported in good condition two weeks later.

Case 11.—H. S., Forty Fort, age 6, was bitten on both legs above the shoe-tops, November 24, 1907, teeth penetrating the skin and muscle, wound cauterized with nitric acid. Dog's head sent to U. P. laboratory; diagnosis of rabies, treatment began five days later. First four days 2 injections, 6 cc, and for next seventeen days 2½ cc, single injections. No bad symptoms developed. Case reported two weeks later in good condition.

Case 12.—F. McH., age 9, was bitten November 24th, by same dog as case 11, on the finger; wound not treated. Treatment began seven days after bite. First four days 6 cc in 2 injections, and next sixteen days 2½ cc, single injections; complained of some burning and redness from the seventh to the nineteenth dose, otherwise no serious symptoms. Case reported two weeks later in good condition.

Case 13.—M. W., age 3 years, 9 months; bitten on left upper lip, October 30, 1907, by a dog that had been bitten by a tramp dog frothing at the mouth, October 1st. The dog that bit the child was killed and no examination of head made. Case was referred to Dr. Poor of New York, who advised treatment, which was begun fifty days after the bite. First four days gave 4 cc in 2 doses each, and next twenty-four days 2 cc in 1 injection, with no bad symptoms during the whole course of treatment. It is now six days since treatment ended and there has been no bad symptoms.

SUMMARY.—2 cases 3 days after bitten.
2 " 4 " " "
1 " 5 " " "
1 " 7 " " "
2 " 11 " " "
1 " 25 " " "
2 " 28 " " "
1 " 32 " " "
1 " 50 " " "
6 cases 21 days each.
3 " 20 " "
2 " 19 " "
2 " 28 " "

TREATMENT.—"Since 1885 the Pasteur Treatment has been applied to human beings bitten by rabid animals, and the success of the method justifies the statement that in all cases of bites from rabid animals the patient should be subjected to the inoculations at the earliest possible moment. The principle of treatment is comprised in the establishment of an immunity during the period of incubation, and consists in the inoculation of a virus of graded potency present in bits of the spinal cord of rabbits. Since the commencement of the Pasteur preventive treatment some 55,000 persons have been inoculated, with an average mortality of ¾ of 1 per cent. (Ravenel)."

DR. LEWIS H. TAYLOR.—Some subjects presented for discussion are perennial and are frequently before us, but this subject seems to be decennial. The first paper on Rabies was presented to this Society by Dr. R. Davis, in 1886, another by Dr. Mengel in 1896, and now we have have this one by Dr. Robinhold in 1907. Dr. Long has stated that not much has been written, but this is an error; we have very many papers and reports of cases right here in our Medical Library, and I presume that in these shelves you will find probably a hundred or more articles on this subject. I have read several of them,

but one of the most interesting is that presented to this Society by Dr. Davis, twenty-one years ago. He called attention to the fact that rabies is essentially a disease of animals and there is no such thing as hydrophobia in the dog. I notice that Dr. Robinhold and many others use the term interchangeably, speaking of hydrophobia in animals as well as in man. Now, it seems to be a fact that the dog, even in the advanced stages of the disease, is not at all afraid of water, but will even lie down in it, and also lap the water with his tongue. The real hydrophobia, in the human species, is not more a dread of water than it is a dread of all substances. It is spasms brought on by the attempt to swallow water or any other substance, whatever, whether it be liquid or solid; even a breath of air or the slightest noise, as the essayist has stated and as many others have written, is sufficient to cause the spasm.

Another matter of interest which I think was referred to also by Dr. Davis is in regard to the co-called frothing at the mouth of the mad dog. This is simply in the later stage when the paralysis has set in, and owing to the inability to control the muscles of the mouth the saliva drips from the mouth and gives the appearance of the co-called frothing.

I heartily approve of all that has been said in regard to the protection of people and believe that we should sustain the mayor and sanitary committee of councils in every effort to protect the people. If all dogs could be exterminated this disease would disappear. We certainly should not allow any dogs at the present time to run at large without being muzzled.

Among the interesting papers on this subject which we have here at hand, I would call the attention of those who care to read it, to one quite remarkable article in the 19th volume of the *Edinburgh Medical Journal.*

Dr. Guthrie.—Much of this howl against the dog crusade arises from young women who are not well balanced, and women of uncertain age who would rather have lap-dogs than children, and from sportsmen who are the most selfish of men.

I can see no reason for allowing a dog to run at large on the streets than for giving the same permission to a horse, or a cow, or a goat, or a hog. If a man wishes to own a dog, no one can dispute his right to do so, provided he keep the animal on his premises, either in his house or in a kennel.

Reference has been made to me as dircting attention to the Health Department of New York City for the preventive treatment of hydrophobia.

Several years ago I had a patient, a working man, who had

his finger lacerated by a pet dog in a family of wealth and refinement. This dog was very carefully petted, and let out only at nights for a few minutes before the family went to bed. The dog soon showed signs of rabies, was killed, the head sent to Dr. Pearson of the University of Pennsylvania, and the diagnosis confirmed.

I have very little confidence in some of the so-called institutions for the prevention of hydrophobia, but say what you will of some features of the government of New York City, there are two departments that are worthy of the highest confidence: the public schools, and the health department.

Dr. Follen Cabot was then Commissioner of Health, and my patient was sent to him and he received the most careful and efficient treatment, and at a most reasonable rate.

You will pardon the digression, I trust, when I am emboldened to say that in one of these features, namely, the public schools, Wilkes-Barre ranks well, when compared with New York, and I hope to see the day when our health department may take the same position.

When Dr. Prevost raised the question with me, I recommended the New York City Health Department, now so ably headed by Dr. Thomas Darlington, who is a highly esteemed and honored member of the medical profession, and the results Dr. Prevost has detailed this evening fully justifies the wisdom of the advice then given.

Dr. Fell.—The life of one child is of more value than all the dogs in the State, and it is not setting a very great value on the child's life at that. We ought certainly to strongly support the city officials in this crusade against the dogs and the further spread of rabies, a disease in which the danger of infection is greater than in small-pox. The quarantine confers no hardship on the dogs, but rather protection, and I am surprised at the statement made by Mayor Kirkendall, that the physicians were among those most bitterly opposed to the carrying out of the quarantine. It would be much better if the conditions obtained for the hundred days should be made perpetual, as dogs should not be allowed to run loose in the street, any more than cows, horses, geese or pigs. In reference to the registration of dogs, this whole question has made more liars out of the people than any other question before the people of the State.

Dr. Ahlborn.—It is not easy to realize what the mayor and sanitary committee have been compelled to endure in the way of criticism on account of this crusade, while the truth is, the

committee stated that they did not take any action until it was absolutely necessary. Only yesterday, a report was received from Dr. Pearson, of the State Department, that two heads that had been sent from here were from dogs that had been rabid, and these animals, as well as others that have run amuck, are known to have bitten several other dogs, and there are probably fifty cases of rabies developing among the dogs of this city at the present time. It cannot be presented to the people too strongly that they are in danger.

DR. GUTHRIE.—I think we ought to sustain the Mayor and Committee of Council in this matter, and propose this resolution:

Resolved, That the members of the Luzerne County Medican Society heartily commend the Mayor and Sanitary Committee of the city of Wilkes-Barre for their present attitude toward the dog nuisanse.

VITAL STATISTICS OF WILKES-BARRE.

BY F. C. JOHNSON, M. D.

DEATH RECORD COMPARISONS.

For the twelve months ending November 30, 1907, there were 1,109 deaths in Wilkes-Barre, 228 more than in the preceding twelve months. This is the highest on record for the city. The next highest was in 1904, when there were 945 deaths. In considering these totals it must be remembered that all deaths occurring in the Wilkes-Barre hospitals are counted in the Wilkes-Barre totals. Often these are out of town cases. There are many hospital deaths, from accident especially, of people who do not belong to Wilkes-Barre. The city ought not by right have such cases added to her mortuary record.

All still births and premature births are added to the list. It is doubtful whether these should be counted in the death record. If the out of town cases dying in the hospitals and still and premature births were deducted, a much better showing would be made. The latter alone number 93 for the year.

The last ten years in Wilkes-Barre show a mortality average of 841, so the record for 1907 is 268 above the average. Of course the increase in population must be taken into account. The 1907 mortality rate, based on a population of 63,000, is one and seventy-six hundredths per cent., or, in other words, a little over seventeen deaths per thousand population.

As usual, pneumonia leads the list with 104 deaths—6 more than in 1906. The 1907 record is the high water mark number for the ten years, excepting 1899, when there were 109 deaths. In ten years there have been 958 deaths from pneumonia in Wilkes-Barre.

In 1907 there were 138 deaths as the result of accidents—43 more than in 1906. All deaths from accidents in the Wilkes-Barre hospitals are included in the totals, although a large number of the victims are from other places.

Heart disease numbered 75 deaths—10 more than during the previous year. The 1904 record—87 cases—was the largest in the history of the city.

Consumption caused 49 deaths in 1907—4 less than the year previous The highest in ten years was 62 in 1904

The deaths from cancer numbered 30 in 1907, 8 less than the previous year. Of late years there seems to have been an increase in cancer beyond the proportion due to increase in popu-

lation, as will be noted by the table. All over the country cancer seems to be on the increase.

There are 12 more deaths from cholera infantum in 1907 than in the previous year. The deaths from cholera infantum and other infantile bowel and stomach complaints during the summer of 1907 numbered about 90, as near as can be judged from the way many of the cases were reported.

There were four deaths from grip, although it is certain that a good many of the cases developed into pneumonia, bronchitis and other ailments, and were thus reported.

Kidney diseases caused 12 less deaths than in 1906. The 1907 record—40 deaths—is a fair average for ten years.

During 1907 there were 26 deaths from typhoid fever, as against 18 for the preceding year. The average for ten years is 15. The 1907 record is the highest in ten years. It must be remembered that a number of cases from out of town are brought to the Wilkes-Barre hospitals. These are included in the Wilkes-Barre totals, although they do not belong there. They make Wilkes-Barre's record worse than it really is. The seeming high mortality shown by the table is due to the fact that while all deaths are reported, probably not more than half the cases are reported by the physicians. Negligence to report cases makes a bad showing, as the mortality is made to appear at least twice what it really is.

There were 11 deaths from diphtheria in Wilkes-Barre in 1907, one more than in the preceding year. While in 1906 there were 125 cases and 10 deaths, in 1907 there were 229 cases and only 11 deaths. This is a gratifying showing. The table shows a great reduction since 1895, when there were 88 deaths out of 299 cases, and in 1892, when there were 130 deaths. For the last 10 years under anti-toxin, the deaths from diphtheria have averaged 14½ a year, while for the 5 years preceding the use of anti-toxin, the deaths averaged 80 per year.

In 1907 there were 139 cases of scarlet fever and 8 deaths, and in 1906 there were 271 cases and only 2 deaths. The proportion of deaths to the number of cases varies considerably from year to year. In 1902, for instance, there were 409 cases and 14 deaths.

In 1907 there were 165 cases of measles and no deaths. In 10 years there have been 2,166 cases reported and 11 deaths. Not all of the cases are reported. The way in which this disease fluctuates is shown by the fact that 430 cases were reported in 1906 and 165 in 1907. In 1898 only one case was reported.

WILKES-BARRE MORTUARY RECORD,

FOR YEAR ENDING DECEMBER 1, 1907, AS REPORTED TO CITY CLERK.

F. C. JOHNSON, M. D.

Cause of Death.	December, 1906	January, 1907	February	March	April	May	June	July	August	September	October	November	Totals, 1907	Totals, 1906	Totals, 1905	Totals, 1904	Totals, 1903	Totals, 1902	Totals, 1901	Totals, 1900	Totals, 1899	Totals, 1898
Accident	15	5	10	16	10	12	18	9	10	14	10	9	138	95	87	100	74	44	64	57	64	48
Appendicitis	—	—	—	1	1	1	—	—	—	—	—	1	4	6	5	6	5	6	4	1	3	6
Apoplexy	4	4	3	3	2	3	2	6	3	3	1	4	38	35	41	25	27	26	30	23	19	19
Blood Poisoning	2	2	—	—	1	2	4	—	2	4	4	—	21	6	14	3	13	11	3	14	10	6
Brain Disease	—	2	—	1	2	2	2	1	—	—	1	—	11	10	11	13	1	8	3	5	19	3
Bronchitis	4	6	3	2	1	4	5	2	—	—	3	4	34	16	9	10	11	12	15	20	24	26
Convulsions	4	6	2	4	2	4	3	1	3	2	2	—	33	16	28	27	25	33	28	47	32	39
Cancer	1	5	2	3	2	7	2	—	2	—	3	3	30	38	34	12	14	31	19	27	22	15
Croup	—	—	1	—	—	1	—	—	—	—	1	—	3	1	4	14	7	8	4	4	11	8
Cholera Infantum	—	—	—	—	—	—	—	21	15	13	—	1	50	38	30	32	24	38	30	37	33	50
Consumption	4	1	2	7	6	6	6	4	3	3	3	4	49	53	37	62	49	28	46	51	44	47
Colitis and Enteritis	1	—	—	—	—	1	—	7	17	3	5	1	35	22	12	13	11	14	16	22	13	17
Diarrhœa	—	1	—	—	—	—	—	—	2	1	—	1	5	8	4	8	4	10	5	9	5	7
Diphtheria	—	—	1	—	—	1	2	2	1	3	1	—	11	10	10	26	13	17	15	19	8	16
General Debility	2	3	1	2	3	6	1	3	—	2	2	1	26	21	32	28	32	31	34	41	39	44
Grip	—	2	1	—	—	—	1	—	—	—	—	—	4	1	2	3	6	—	7	8	9	2
Heart Disease	11	4	4	7	6	13	5	3	3	7	5	7	75	65	59	87	66	76	59	55	44	46
Hemorrhage	—	—	2	2	1	1	1	1	—	—	1	2	11	4	4	3	5	4	10	—	5	8
Kidney Disease	4	6	2	5	3	2	2	4	4	4	2	2	40	52	45	47	47	30	39	22	34	22
Liver Disease	1	2	—	3	—	4	2	—	1	1	1	3	18	9	15	5	8	8	6	9	6	9
Meningitis	1	2	—	2	1	2	4	2	—	2	1	—	17	17	16	26	18	14	11	23	17	20
Paralysis	—	1	1	—	—	2	1	—	3	2	1	1	12	8	18	16	10	12	8	7	7	8
Peritonitis	4	2	1	2	1	2	4	3	—	2	2	1	24	10	16	27	21	7	18	11	9	18
Pneumonia	16	18	9	8	9	10	8	5	1	5	5	10	104	98	100	121	89	73	95	86	109	83
Still Born	7	10	11	6	6	11	5	9	11	6	7	4	93	73	89	55	67	60	69	51	57	50
Scarlet Fever	—	1	—	—	—	—	2	1	1	1	—	2	8	2	3	8	18	14	9	7	3	1
Stomach Disease	2	—	—	1	1	2	—	—	1	2	1	1	11	10	9	14	11	6	8	6	10	7
Tumor	—	—	1	1	—	1	—	1	—	—	—	—	4	4	6	3	3	1	3	5	2	3
Typhoid Fever	—	—	4	2	2	1	—	3	1	3	6	4	26	18	8	11	14	6	18	16	15	19
Weakness	2	1	2	—	3	3	—	4	6	6	3	6	36	32	34	43	33	29	39	45	22	8
Other Diseases*	9	12	7	4	14	17	19	11	10	9	10	16	138	103	86	97	93	77	78	73	50	59
Totals by Months	94	96	70	82	77	121	99	103	100	98	81	88	1109	881	868	945	819	734	793	801	745	716

*Other diseases, not included in the classification above, but included in the totals, are as follows: Abscess 6, asthma 17, atelectasis 3, childbirth 3, diabetes 8, erysipelas 5, gangrene 2, obstruction of the bowels 7, myelitis 2, alcoholism 3, cerebro-spinal meningitis 3, complications 6, malnutrition 4, rheumatism 2, unknown 3, extra-uterine pregnancy 1, pleurisy 4, syphilis 1, exhaustion 7, gallstones 1, whooping cough 7, muscular atrophy 1, degeneration of spinal cord 1, epilepsy 1, laryngitis 2, pyrosis 4, strangulated hernia 3, shock 10, inflammation of gall bladder 1, intussusception 3, intestinal indigestion 1, neurasthenia 1, strangulation 3, tonsilitis 1, eclampsia 1, pernicious vomiting 1, remittent fever 2, spina bifida 1, anemia 1, thrombosis 1, asphyxia 2, dystocia 1, locomotor ataxia 1.

CONTAGIOUS DISEASES.

	Diphtheria.		Typhoid Fever.		Scarlet Fever.		Measles.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Dec., 1906 . .	9	0	3	0	17	0	10	0
Jan., 1907 . .	19	0	19	0	5	1	0	0
February . . .	9	1	3	4	8	0	1	0
March . . .	4	0	4	2	12	0	10	0
April	7	0	4	2	19	0	21	0
May	19	1	1	1	10	0	25	0
June	16	2	4	0	19	2	41	0
July	22	2	7	3	11	1	47	0
August . . .	25	1	14	1	10	1	3	0
September . .	31	2	16	3	9	1	2	0
October . . .	33	1	9	6	12	0	0	0
November . .	35	1	7	4	7	2	5	0
Totals, 1907 .	229	11	91	26	139	8	165	0
Totals, 1906 .	125	10	77	18	271	2	430	2
Totals, 1905 .	217	10	58	8	166	3	228	0
Totals, 1904 .	313	26	36	11	88	8	391	3
Totals, 1903 .	182	13	57	14	205	18	185	2
Totals, 1902 .	162	17	34	6	409	14	66	0
Totals, 1901 .	86	15	85	18	227	9	507	3
Totals, 1900 .	140	19	61	16	198	7	49	0
Totals, 1899 .	166	8	48	15	223	3	144	1
Totals, 1898 .	160	16	84	19	88	1	1	0
Totals, 1897 .	169	26	58	15	69	12	229	0
Totals, 1896 .	266	36	145	21	51	2	14	0
Totals, 1895 .	299	88	77	21	70	4	15	0
Totals, 1894 .	—	82	—	21	—	1	—	7
Totals, 1893 .	—	52	—	16	—	—	—	5

In the years 1893 and 1894, as given above, the contagious diseases were not reported, only the deaths.

Besides the diseases noted above there were reported, in

1907, 14 cases of chicken-pox, with no deaths; 27 cases of whooping cough, with 7 deaths; 15 cases of mumps, with no deaths; 3 cases of cerebro-spinal meningitis, with 3 deaths; 1 case of lockjaw, with 1 death; 9 cases of erysipelas, with 5 deaths. There were also reported 19 cases of pneumonia. Not nearly all of the cases of pneumonia were reported, since there were more than five times 19 deaths. It is also very evident that not all of the other cases of contagious diseases were reported, especially those of a minor nature.

BIRTHS IN WILKES-BARRE FOR 1907.

The following births for Wilkes-Barre were reported to the City Clerk's office. It is probable that not all births were reported by physicians, as the law is a comparatively new one:

	Males	Females	White	Colored	Totals
December, 1906	59	39	98	0	98
January, 1907	63	58	121	0	121
February	41	43	84	0	84
March	49	37	86	0	86
April	61	52	113	0	113
May	42	31	73	0	73
June	48	57	105	0	105
July	109	85	191	3	194
August	56	52	107	1	108
September	60	61	121	0	121
October	84	66	149	1	150
November	32	29	60	1	61
Totals for 12 months	704	610	1208	6	1314
Totals for 1906					1201

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